TRANSFER OF TECHNOLOGY AS A VERITABLE VEHICLE FOR ECONOMIC GROWTH IN NIGERIA: THE LAW CONNECTION*

Abstract

The basic aim of successive governments in Nigeria is effective utilisation of technology in the various development projects, the ultimate result being to transform the country from the stage of the so-called developing country to the level of developed countries. In order to achieve the above goal, successive governments had emphasised transfer of technology through trade, bi-lateral/multi-lateral and technical co-operation agreements, training, and the like, which involve the movement of men and materials; purchasing of equipment; services and licences. These generally involve costs, which have to be settled usually in the currency of the country from which the equipment and services are obtained. This article interrogates why Nigeria has not exported as much technology as she has imported over the years, and concludes that if the trend is not reversed, the desired ascendance to the league of developed countries, using the parameter of a buoyant economy, may just be an illusion. It, therefore, recommends, among other things, the institution of a robust legal regime that would encourage Nigerians to acquire the requisite technical know-how to enable them venture into technological inventions that could also be transferred to other countries in exchange for their hard currencies.

Keywords: Technology, transfer, inventions, economic growth.

1. Introduction

In present day economies, industrial technology constitutes a vital engine for growth; and the effective acquisition, absorption and adaptation of technology is an essential prerequisite for rapid industrial growth.[1] *A fortiori*, without the growth of manufacturing industries their world remained condemned to poverty and powerlessness. Manufacturing industries employ technologies that multiply productivity. It also produces machinery and equipment to raise productivity in all other sectors – and without increased productivity, the pie available for distribution must remain distressingly small. Without manufacturing, sprawling urban centres remain only very large villages with little potential as mass markets for domestic agriculture. Without manufacturing, a country must remain dependent on imported inputs for agriculture, energy, transport, and many essential consumer goods. Without manufacturing, the labour released from an increasingly productive agricultural sector must remain underemployed, marginalised and increasingly impoverished. In short, without industrialisation, hopes for improving the third world's quality of life remain a chimera.[2] Nigeria is part of the third world. That she is in dire need of technology is sacrosanct. What then is the degree of Nigeria's technological attainments? What are the constraints, if any? If there are constraints, of what nature? Legal or empirical, or both? We now proceed to examine these questions within the context of the municipal legal order cum the socio-economic and political climate in Nigeria since Independence.

2. What is Technology Transfer?

Transfer of technology is defined as the transfer of systematic knowledge for the manufacturing of a product for the application of a process or for the rendering of a service and does not extend to the transactions involving the mere sale or mere lease of goods.[3] The exclusion in the above definition of the sale or lease of goods as a means of technological transfer notwithstanding, it is undeniable that it is a plausible mode of technology transfer given the availability of the requisite institutional and manpower base in a given country. The process could, however, be daunting due to the inaccessibility

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[1]Rana, KDN Singh**.** 'Technology Acquisition, Transfer and Development*'* cited in 'Creating a Favourable Environment for Foreign Investment' being *Proceedings of a workshop* organized by the United Nations Centre on Transnational Corporations (UNCTC), published by the United Nations Centre on Transnational Corporations with the Federal Ministry of Justice, Nigeria, 1991 page 9-10.

[2]*The Balance between Industry & Agriculture in Economic Development*. Proceedings of the Eight Congress of the International Economic Association, Delhi, India (New York, St. Martins Press 1986).

[3]The definition is proffered by the United Nations Conference on Trade and Development (UNCTAD), a UN Agency in the field of trade and developments, which was first convened at the General Assembly in December 1964.

of technical know-how, which is either coded, or completely absent. According to Robert H. Glew, when most biomedical scientists hear the words 'technology transfer', particularly in the context of one or another developing country, the kind of transfer they usually think of involves hardware such as computers, spectrophotometers and flourimeters for measuring enzymes or quantifying substances whereas scientific writing course is another kind of technology transfer.[4] Technology transfer has also been defined, variously, as 'the whole-sale importation of sophisticated, complex and ultra-modern industrial machinery and expertise that go with it to help install, service, maintain and manage it until a handover to the indigenes of the country';[5] 'the process whereby the technology that has not been domiciled in the country is brought into the country from another country where it already exists'.[6]

3. Licensing for Technology Transfer

Licensing is a common practice in international business activities. This simply means that a person or an outfit in one location is given the authority under contractual arrangements to duplicate for commercial purposes products or processes originally developed by another person or organisation in another location. Sometimes, the licensee is legally allowed to make modifications that will enhance the products or processes to his own local advantage. Technological knowledge as a means of production became progressively more specialised to enable management monopolise knowledge so as to control all stages of production.[7] Technology is very closely connected to production. It is not surprising, therefore, that the owners of the transnational corporations are also the owners of technology. Licensing for them is a means of monopolising the technology. As has been stated above already, technology licensing passes technology from the owner to another party usually on the payment of a fee. The benefiting party is usually a business entity desirous of utilising the technology for a productive enterprise. Licensing could be within the borders of a State or could be transborder in nature, in which case it becomes a transborder transfer of technology. In fact, licensing is the purest means of transferring technology, especially when information is the subject of the licence. This is because of the class of rights involved in licensing, i.e. intellectual and industrial property rights. Since they are the result of innovative activity, licensing provides the means by which the owner of the technology utilises the technology himself or licenses/assigns the right to use the technology to other persons. Without licences, the industrial and intellectual property in the product would be unprotected and the owner would not be able to have an instrument of ownership for the result of his innovative activity. This in turn means that the right to transfer the commodity would be limited.

The essential element of the technology transfer can be described as certificates given to an inventor to protect his right in the technology. These certificates are what are known as licences. Licensing is one of the formal methods of transferring technology and the right to use the information in the licence is what is transferred in licensing. In fact, a patent is a licence, which is issued to an applicant to utilise the information contained in the document. Technology licensing occurs only when one of the parties owns valuable intangible assets, known as intellectual property, and because of that ownership, has the legal right to prevent the other party from using it. A licence is, thus, consent by the owner to the use of intellectual property in exchange for money or something else of value. Therefore, technology licensing does not occur when there is no intellectual property. There are different kinds of technology licenses. You will hear licenses referred to by many names, but it is useful to think of them in three categories. Licenses may be for certain intellectual property rights only (example, a license to practice an identified patent or to copy and distribute a certain work of authorship). Secondly, licenses may be for all the intellectual property rights of any kind that are necessary to reproduce, make, use, market, and sell products based on a type of technology (example, a license to develop a new software product that is protected by patent, copyright, trademark and trade secret law). On the other hand, a license may also be for all the intellectual property rights necessary in order to create and market a product that

[4]Robert H. Glew. 'The True Meaning of Technology Transfer', (1996) 4 *Electronic Journal of Biotechnology*, p. 1.

[5]See Paper presented by Onuonye Eluekezi at a symposium organised by the Benue Cement Company Senior Staff Association in 1983.

[6]See Paper presented by Engr. S. I. Nyagba at the above symposium.

[7]Tom Schuller. 'Democracy at Work' (2010) *OUP Journal*, p. 85. He also notes in p. 135 that 'Technology is a concurrent product of monopoly capitalism.'

complies with a technical standard or specification (example, a group of enterprises has agreed on a technical standard to ensure interoperability of devices – the group agrees to pool their intellectual property rights and license to each other all rights each will need to manufacture and sell the product).[8]

4. Parties to Technology Transfer

After the World War II, a technological revolution fostered specialisation and exchange on an unprecedented global scale.[9] However, for developing countries, this globalisation precipitated an utter 'trade dependency that spelled their poverty and oppression'.[10] Thus, in broad terms, the parties to technology transfer are the developed countries and less developed countries. But in specific terms, the process of technology transfer from the developed to the less developed involves transnational corporations, individuals, firms, partnerships, persons (whether natural or juridical) and other associations, owned or controlled by states, government agencies and international, regional and subregional organisations.[11]

5. Some International Treaties and Municipal Laws Regulating Transfer of Technology

The modern state is predicated on rules and regulations that govern the relationship between nations *inter se*, and between the citizenry. Invariably, there are reciprocal duties and rights, the breach of which could be enforced before a legal arbiter. The state seeks to address every societal problem with legislative solutions. This view accords with Roscoe Pound's theory of law as a 'social engineering' and that the state has a tendency to invoking the law in resolution of social problems.[12] *A fortiori*, the state is more or less an impersonal being, perceptible only in rules and regulations. This is portrayed more graphically by Theodore Lowiz thus: 'One can look in vain for the state. What one generally sees are rules… The most important and formal rules are called by many names, such as laws, statutes, decrees, regulations. Most recently, the general category is referred to as policies or public policy'.[13] This position is also corroborated by Seidman thus, 'One cannot intelligently discuss the institutions that shape third world reality – property, international trade corporations' banks and the money supply… without discussing the relevant laws.'[14]

The Relevant Laws

Some of the international legal regimes pertaining to technology ownership and transfer are: The Paris Industrial Property Convention (1883), the Berne Copyright Convention (1886), the Universal Copyright Convention (1952), the United Nations Conference on Trade and Development (1964). The General Agreement on Tariffs and Trade (1948) as modified in the Uruguay Round which ended in December 14, 1993 in Geneva, precipitating the principles in World Trade Organisation (WTO), the 1994 Marrakesh TRIPS Agreement, and others. We shall now consider some of these International treaties and legislation in Nigeria on transfer of technology.

The Paris 1883 Industrial Property Convention

The urgent need for transborder protection of technology necessitated this convention, which was signed in Paris on March 20, 1883.[15] Article 1 extends protection to patents, utility models, industrial designs, trademarks, service marks, trade names and the repression of unfair competition. The

[8]*Successful Technology Licensing*. A publication of the World Intellectual Property Organisation**,** p.4.
[9]Frobel et al. *The New International Division of Labour: Structural Unemployment in Industrialised Countries*. London: Cambridge University Press, 1980, p.54.
[10]Seidman, *State and the Law in the Development Process*. Great Britain: Mac. 1994, p. 225.
[11]See Article 1(a) of the United Nations Draft International Code of Conduct on the Transfer of Technology. United Nations, TD/CODE TOT/14, March 1978, p. 3.
[12]Pound Roscoe, *Social Control Through Law*. New Haven: CT Yale University Press, 1942, p. 115.
[13]Theodore Lowis. 'The State in Politics: The Relation between Policy and Administration.' *Haregot*, Vol.II p. 1070, 1987).
[14]Seidman. Op. Cit. p. 41-42
[15]It has been subsequently revised thus: in Brussels on December 14, 1900, in Washington on June 2, 1911, in the Hague on November 6, 1925, in London on June 2, 1934 and in Lisbon on October 31, 1958. See Douglas Falconer et al. *Terrell on The Law of Patents*. London: Sweet & Maxwell, 1971, p. 612.

protection is largely hinged on the principles of national treatment and reciprocity amongst member states. The United States and Britain did not sign the treaty, but Nigeria is a signatory to it.[16]

The 1886 Copyright Berne Convention

The Convention of the International Union for the Protection of Literacy and Artistic Works was signed in Berne on the 9th of September, 1886. It was revised in Berlin in 1908, in Rome in 1928 and at a Conference of the Union, which met in Brussels on the 5th of June, 1948 and closed on the 26th of June, 1948. There was yet another revision in Stockholm in 1967 and in Paris in 1971. The pressure from the developing countries, for unrestricted access to works protected by the Berne Convention led to the granting of some concessions at the Stockholm revision of 1967. The Stockholm meet led to a Protocol which allowed developing countries to reduce the term of copyright in their national law; to authorize translations into their national languages; to authorize publishing for educational and cultural purposes and to exclude from the scope of infringement reproduction for teaching, study or research; and to limit the scope of the right to broadcast.[17] However, the Protocol was still born since developed countries failed to ratify it as they considered it too favourable to the developing countries. Consequently, the concessions were limited in the 1971 Paris revision. Under the Paris dispensation, the limitations which developing countries are entitled to introduce into national law were reduced to two.[18]

The Law of the Sea Convention on Transfer of Marine Technology

Apart from specific international Laws on Intellectual Property, there are others, which though not specifically referred to as pertaining to intellectual property, but which broadly affect intellectual property since they relate to inventions and technology. One of such Conventions is the Laws of the Sea Convention.[19] One of the aims of the Convention is to enable the less developed countries have access to new technology for the exploitation of Marine resources. Article 144 of the Convention provides, *inter alia*, as follows: 'The authority shall take measures in accordance with this Convention… to promote and encourage the transfer to developing states of such technology and scientific acknowledge so that all state parties may benefit therefrom'. But then under this regime, transfer of marine technology is not mandatory. It is merely a duty to cooperate. The mandatory provision under Article XI of the Convention has been cancelled. Similarly, the absence of any administrative machinery to enforce cooperation in the area of technology transfer is fatal to whatever advantage the less developed countries may derive from it. Coupled with protective and defensive stance of the municipal intellectual property laws on technology transfer, Nigeria has in recent years enacted a series of legislation with a view to attracting foreign investors, and consolidating their gains. The first in this series is the National Office of Industrial Property Act.[20] It was later changed to the National Office for Technology Acquisition and Promotion Act (NOTAP).[21] One of the main functions of the Office is to register contracts relating to technology between Nigerians and other bodies, mostly, the transnational corporations. Registrable contracts[22] are contracts, which in the opinion of the Office partially or wholly relate to any of the following, namely:

1. The use of trade marks.
2. The right to use patented inventions.
3. The supply of technical expertise in the form of the preparation of plans, diagrams, operating manuals, any other form of technical assistance of any description whatsoever.
4. The supply of basic or detailed engineering.

[16]See Article 19 of the Convention and Patents and Design (Convention Countries) 1971 Order made pursuant to Section 27(1) of the Patents & Designs Act Op. Cit. p. 12523.
[17]Cornish. *Intellectual Property: Patents, Copyright, Trademarks and Allied Rights*. London: Sweet & Maxwell 1989, pp. 252 & 253.
[18]Cornish. Ibid, p. 253
[19]United Nations Law of the Sea of 10 December, 1982
[20]Cap. 268, LFN 1990.
[21]Now cited as National Office for Technology Acquisition and Promotion Act, Cap. N62, LFN 2004.
[22]Section 4(d) NOTAP Act (supra).

5. The supply of machinery and plant, or the provision of operating staff or managerial assistance and the training of personnel.

In recent years, the Office's focus has shifted from regulatory control and technology transfer to a more promotional and developmental role (although the law itself establishing the Office has not changed.) With the assistance of the World Intellectual Property Organisation (WIPO), the Office has also established a patent information and documentation center for the dissemination of technology information to end-users. In addition, the Office has a mandate to commercialise Research and Development institutions with industry.[23]

Some Foreign Investments Laws

Legislation such as the Nigerian Investment Promotion Commission (NIPC) Act[24] and the Foreign Exchange (Monitoring and Miscellaneous Provisions) Act[25] are very auspicious to facilitating transfer of technology because they are meant to be investment promotion agencies of government. But, how successful they have been in this regard is another question entirely. However, it must be admitted that since their inception, especially the former, the tedious pre-investment approval which foreign investors used to undergo has been eliminated and replaced by the process of registration of foreign investments by NIPC. A foreign investor can now finish incorporation before registration with NIPC.[26]

6. Nexus between Patent and Transfer of Technology

A patent is a set of exclusive rights granted by a government to an inventor or applicant for a limited amount of time. In other words, it confers the right to secure the enforcement power of the State in excluding unauthorised persons from making commercial use of a clearly identified new and useful technological invention. On the other hand, technology is the systematic study, mastery and effective utilisation of scientific knowledge in practical tasks in industry. Such systematic studies using scientific knowledge most often lead to inventions, which may be utilised by the inventor or transferred. A patent affords a set of exclusive rights: to use the invention, to manufacture it, to sell it or place it on the market. Generally, a licence provides an authorisation for the licensee to carry out all those acts. An inventor of a new and useful technological invention first protects his invention by applying and obtaining a patent. He is then at liberty to either utilise the invention himself, sell all his exclusive rights to the patented invention to another person or legal entity, grant a licence to another person or legal entity by permitting him or it to perform, in the country and for the duration of the patent rights, one or more of the acts which are covered by the exclusive rights to the patented invention in that country, or enter into a know-how contract with another party.[27] If the inventor does any of the above, he transfers that technology to another person or legal entity. Herein lies the nexus between patent and transfer of technology. It should be noted, however, that technology is not transferred via patented inventions alone, there are other forms of technologies that are transferred that are not patented inventions. A few examples of these are: consultancy services, technical assistance and managerial assistance. But this category of technologies is not the concern of this article. It is rather concerned with technology acquired and transferred through patented invention.

7. Some Technologies so far Transferred into and out of Nigeria

According to the opening lines of the *Revised Guidelines on Acquisition of foreign technology Under NOIP / NOTAP ACT cap 268 LFN (as amended by decree no. 82 of 1992)*, published by the National Office for Technology Acquisition and Promotion (NOTAP), 'in the process of implementing the provisions of Decree No. 70 of 1979 as amended by Decree No. 82 of 1992, it became necessary to provide 'Internal Guidelines on Evaluation and Payments in Technology Transfer Agreements' and 'Guidelines to Assist Nigerian Enterprises in Negotiating Transfer of Technology Agreements'.[28] The

[23]See Nigeria Country Commercial Guide FY 2003 – Investment Climate Statement on the internet, para. 28, p. 6.
[24]Cap. N117, LFN 2004.
[25]Cap. F34, LFN 2004.
[26]See sections 20 and 27 NIPC Act (supra).
[27]See WIPO, Intellectual Property Reading Material pp. 166 and 167
[28]The Guidelines was updated in 2003 and now contains the new policy on Trade mark and the revised Registration fee charged by the Office for its services. It also reflects the proper citation of the law that set up the Office.

procedure for the registration of Technology Transfer Agreement by a transferee is outlined in the Guidelines and generally involves advisory services to the transferees on how to ensure better terms from transferors. The prescribed fees for registration of such agreements are also provided in the Guidelines. Abiding by the Guidelines, a total of 3,466 Technology Agreements/Contracts were submitted to the National Office for Technology Acquisition and Promotion (NOTAP) in all the industrial sectors between 1983 and 2003 while a total of 2,153 were registered by the Office within the same period.[29] It will be conceded that tangible transfer of technology has resulted from the registration of Technology Transfer Agreements/Contracts and the advisory services of the Office. These transfers have, undoubtedly,

- Increased local manufacturing companies in the area of raw materials, particularly in the Agro-Allied sector, Non-Ferrous products (aluminum), the solid mineral and chemical sector, and the non-metallic minerals products (cement, glass);
- Ensured more capacity building and increased level of training of Nigerians by most companies, leading to greater expertise and skill acquisition in the companies;
- Ensured better terms in Technology Transfer Agreements submitted to the Office;
- Improved the negotiating capabilities of Nigerian entrepreneurs due to the Office's Technology Advisory Services;
- Encouraged noticeable attempts at instituting Research and Development units in most of the companies as most multinational companies generally depended on their parent companies/foreign technical partners for their Research and Development activities.

From available data, registration of Technology Transfer Contracts by the Office has made some savings on the Nation's Foreign Exchange Remittances.[30] Such registrations ensure that licensing fees and royalties are at equitable levels and in line with international practice. By close collaboration with the Central Bank of Nigeria and in line with Exchange Policy Guidelines, the Office's intervention and certification ensure control of invisible trade transactions and commensurate fees for technology licensing and services. The Office's intervention in ensuring that commensurate fees are paid for foreign technology has led to:

- Savings of more than ₦35 billion;[31]
- Reduction of Capital flight which could have adversely affected the national balance of payment receipts;
- Collaboration with Central Bank of Nigeria to check areas of leakages and manipulation of technology fees for remittances.

8. Conclusion and Recommendations

The term 'transfer of technology' crept into the lexicon of the less creditable and the more dubious of multinationals and international business organisations in recent times simply as a booby-trap with which to ensnare temporarily or potentially rich nations of the industrialising world. Certain factors have inhibited the smooth importation of foreign technology into Nigeria and these are classified here into external and internal forces. Foremost among the external forces is the colonial experience of the country. These experiences have left Nigeria without the true realisation that political and economic independence are inseparable, if either of them is to be meaningful. While the country undoubtedly enjoys political independence, the controlling nerve centres of all her vital economic activities are still left in foreign capitals, thus rendering the country vulnerable to manipulations that rob her of true independence and freedom of action in matters connecting her with other truly free nation States. More often than not, Nigeria finds herself boxed into a corner from which she cannot act other than in the interests of neo-colonialist. The other strand of the external force is political. Quite regrettably, Nigeria has been goaded most times into taking some political stands on international issues which tend to make her a target for distabilisation and exploitation by nations with which she had had no previous contact. Undoubtedly, the more problems that Nigeria has to face, the less energy she can spend on issues of

[29] See the National Office for Technology Acquisition and Promotion (NOTAP) publication, p. 4
[30] Ibid, p. 10
[31] Contained in the table and Chart of the year-by-year savings.

technology development. These external forces have been eloquently and lucidly expressed by a Black American writer, Ms. Sylvia Ardyn Boone, as follows:

> The battle has been long and protracted and is far from over. For Africans, victory will mean control over their own land, politics, economics, culture and psychology. It will mean that decisions concerning the destiny of an African nation will be made in that country, by the country. At this point in time, this simply is not true.

Foreign powers, according to her, are always in the habit of impoverishing Africa by their formulation of prices of raw materials and manufactured goods, foreign policy, governmental structure and access to information and education. Quoting Kwame Nkrumah, she said:

> Africa is rich but Africans are poor'. Sounding extremely bitter, she lamented: For three hundred years Western Europe has regarded Africa as some sort of appendage, a God- given limb supplying riches it lacked itself. Mother Africa in all her generosity has never been able to Resist. First, it has ivory and gold. Then it was slaves, black bodies by the millions, strong black backs to raise the sugar of the West Indies and cotton of the American south, to construct and fuel the industrial Machinery of the modernising West. After manpower the West wanted spices, chocolate for Europe's sweet tooth; raw materials and produce for Europe's manufacturing plants were needed, then markets for her finished products. A field of religious and cultural expansion, a safety valve for its misfit citizens.

She stated further that Africa also offered the West gold and diamonds for milady, tin, bauxite, rubber for cars, uranium and cobalt for bombs; countless barrels of oil to turn the wheels of industrial life; sculpture and bronzes for museums, new music, poetry and dance for entertainment and inspiration. Africa also suffered great brain drain of scientists, professors and professionals to staff institutions belonging to the West. In the same bitterness she states:

> Whenever Europeans (and Americans increasingly) have a need for something for development and prosperity, they find it in Africa. Here is bounty and abundance, an inexhaustible store house, the bottomless well, the magic lantern, the chest of buried treasure.[32]

The same sentiments and attitudes still persist today even though they have been more carefully camouflaged and dressed up to make them more palatable. They are still discernible.

Let us now turn to the internal forces. Topping the list of these is the very regrettable fact that prior to and since political independence, Nigeria is yet to overcome the problem of leadership. Politics, foreign and domestic, have been non-definitive, fluid, contradictory, inconsistent and incoherent. As a result, one of the areas of national life that has suffered from this is technology development. The nation and its citizens have not been adequately prepared to deal with industrialised nations on the issue of technology transfer so as not to come out on the short end. Another of the internal forces is education. Those planning the educational system for Nigeria are under the false illusion that only graduates of higher institutions can assist in their misdirected technology transfer efforts. This has resulted in the proliferation of institutions of higher learning that are ill equipped and also in chaos in the lower level institutions. Anyone who is familiar with the history of technology will certify that it was only in recent times that the theorist caught up with the artisan. The patent system facilitates the transfer of technology from the industrialized North to the less developed countries of the South. However, it is by no means the only way in which this can be done. For one thing, not all technology is patented. Also, quite often, before a patented process can be successfully worked, there is need for the transfer of unpatented know-how along with the technology covered by the patent. Besides, it is not the patent itself which enables the transfer of the technology; rather, by making the title and exclusive rights of the patentee secure, it emboldens him to transfer his technology to others for commercial exploitation. Nevertheless, the patent is an important factor in the technology transfer process.

[32]See '*West African Travels – A Guide to People and Places*' by Sylvia Ardyn Boone, pp. 84-85.

The facilitation of the transfer of technology from the developed countries to the developing countries is one of the central planks of the demands of the developing countries in the context of the establishment of a new international economic order. The developing countries have condemned the present framework within which commodities, financial capital and technology have been traded. They have called for a re-ordering of the framework in order to enable more equitable transfers of these items. The central basis of the developed countries' hegemony over the world economic system is their control of technology and, thus, of industry. To achieve greater balance in economic well-being between the North and the South, the industrialization process of the South has to be intensified. This implies the need for better access to technology by the South. Until the research and development capacity in the South improves sufficiently to generate the technology required for industry in the South, it will be necessary for the developing countries to devise measures that will improve their terms of access to the technology generated in the North. The nature and type of the patent legislation adopted by a particular developing country may have an impact on the terms of access of enterprises in that country to technology generated in the North. Licensing, as earlier noted, is the established method of transferring technology between business enterprises in the form of distribution contracts, management and consultancy agreements as well as technical assistance agreements. When such transfers are within different branches of the same company, these are known as intra-company transfers and usually do not reflect in the local/host nation balance of payment since this is an internal matter between the parties. Technology licensing inter company, that is between two different companies would usually show up in the local/host nation's balance of payment.

Nigeria is at present operating a deregulated investment environment, which is liberal in outlook towards foreign investment. The expectation is that more foreign investment will be attracted to the country.[33] It is likely that licensing agreements between foreign investors and local enterprises will top the list of foreign investment for the present. This is due to the fact that these are less risky to the foreign investor because they involve less financial risk for the investor. The legal regulation for licensing in Nigeria consists of the usual contractual laws which are the basis of the licensing contract; the Patent and Designs Act;[34] Trademarks Act, Copyright Act; National Office for Technology Acquisition and Promotion (NOTAP); as well as the general adjudicatory and arbitration regimes.

It is an accepted fact that technology does not have frontiers, which is why it can be transferred. At this stage of development, however, Nigeria needs to have a legal regime in place, which will encourage local Research and Development operations. This is especially necessary in the liberalised investment environment now operating. The influx of foreign investors will most likely be in the form of licensing agreements, which basically focuses on the technology itself. The government and industrialists will have to set up supplier industries of good quality materials for end products of technology. This will in turn help local producers of these commodities to upgrade their production. Without these measures the nation might continue to be a technology consumer. A licensing agreement should in the final analysis be regarded not only as a business document, but also as an important means of developing the nation. This can be done through facilitating the transfer of the technology aspect of the agreement. It is pertinent then, that the authorities regard licensing agreements as an important component of the foreign investment regime, which should be harnessed towards rectifying the nation's development imbalance. It is further submitted that Nigeria should invest in its human resources and ensure a favourable and stable political environment for investments. For, an incompetent work force is a great disability to technology transfer. According to Kiggundu Moses,[35] they

> Operate in an economic, political, cultural and technical context that almost guarantees failure and in which organizational survival rather than profitability or growth is always the first priority. Several moribund public corporations and parastatals are living evidence to this assertion.

[33]Where a market exists for a product or process, this lacuna could be filled by producers and importers of infringed products. This decreases the market for the owner of the technology and affects his profits.
[34]Laws of the Federation of Nigeria 1990 Cap 326-350
[35]See Kiggundu Moses: Managing Organisations in Developing Countries: An *Operational and Strategic Approach* (West Hartford, CT Kumarian Press 1989).

The local legislation, that is, the National Office for Technology Acquisition and Promotion Act, should be geared towards a more realistic approach to technological transfer. The Office should be empowered to insist that there must be a research and development component in the agreement, which must be carried out in Nigeria. It should provide for compulsory clauses in technology import contracts such as the description, scope and requirements of the imported technology, criteria, time limits and methods for assessing and examining whether the objectives of the imported technology have been reached and apportionment of liability for risk.[36] The current Patents Law in Nigeria should be amended to accommodate the dynamism in the field of technology, especially making principles and discoveries of scientific nature patentable inventions under the Act as against the present provision of Section 1(5) of the Act. Also, Section 7 of the present Act should be amended to make it possible for the owner of lapsed patent to renew the prescribed fees at any time after the expiration of the grace period of six months, provided that it is still within the 20 years statutory period of the grant. Furthermore, since the Government has so far shown interest in the acquisition of technological capacity by establishing Centres for the perfection of indigenous technological breakthroughs, it is suggested that such Centres become a focus of the importation of technology. This, no doubt, would be of net benefit to the count

[36]See O.A. Odiase et al. *Foreign Investment and Technology Transfer in Nigeria: The Question of Adequate Legal Regime.*