APPRAISING THE CONDITIONS FOR PATENT GRANT AND ITS IMPACT ON NIGERIA'S TECHNOLOGICAL DEVELOPMENT DRIVE*

Abstract

Nigeria is a developing nation, and it is found that the conditions for the grant of patent are very difficult to fulfill in developing nations which is characterised by lack of capital, good science education and social facilities like stable electricity. Developing nations are unable to meet up with the already existing technological development not to mention the creation of new products eligible for the grant of patent. The reality is that the overwhelming majority of patents granted by developing countries are granted to foreigners. This work found that Patent system inhibit inventive activity since there is little incentive for domestic companies to invest in developing products in an area heavily covered by the patents of foreign competitors. This work also uses the doctrinal research approach to appraise the conditions of patent grant and the extent to which it has impacted either negatively or positively on Nigeria's technological development drive. It also explores the legal and economic consequences of participation by Nigeria in the legal regime of the international patent system and makes recommendations concerning the extent to which Nigeria should continue to participate in the international patent system or restrict foreign patent to foster technological development of the country. Before the above is done, we shall make a clarification of key terms used in this work.

Keywords: Patent, Conditions, Technological Development and Inventions

1. Introduction

Over the years, technology has contributed immensely to the development of various nations. The role of a technologically educated population in promoting social and economic development has long been recognised.[1] Technology is important for several key reasons. First, it can be used through commerce to generate money and capital income. Secondly, updated technology improves the quality of life of the inhabitants of a nation, whether it is from new medical operating or hygiene equipment *et cetera*. Lastly, technology allows for easier communication, for example, through computers and production of goods using new machinery *etcetera*. Without technological advancement, the world would have been stagnant, characterised by the use of crude instrument with the bulk of manual labour on man instead of advanced machinery.

Technology involves the incorporation of knowledge and ideas on hardware of human artefacts such as tools for the making of improved products or process. Knowledge and ideas are creations of the human mind and as such called intellectual property.2 It is a catalyst for national development, because it offers among other things, the necessary support for change in all the major sectors of the economy, most especially in agricultural and industrial sectors.[3]Because of the importance and intangible nature of intellectual property, they are more vulnerable to stealing and illegal appropriation and this tend to undermine technological development. As such, the law on patent protects inventions that demonstrate technological progress from illegally appropriation by others.[4] In return, the invention must be described in detail to the patent office, which publishes the information, thus increasing the amount of technological knowledge available to the public.[5] This protection is by way of exclusive right granted to a patentee (an inventor) to prevent or exclude others from making, using, selling, offering for sale or importing the claimed invention. The patent system is one of the most powerful policy instruments that have been used for the development and diffusion of new technologies.[6]

The protection of new technologies is not granted automatically but made upon conditions as specified by law. The principal law governing patent in Nigeria is the Patents and Designs Act.[7] Because of the principle of territoriality, patent rights granted by a particular state are only exercisable within the state. Therefore, where a patentee desires protection in any state, he has to apply for same in accordance with the laws of that state. However, patent rights can be extended beyond the boundaries of a nation by state parties to international conventions and treaties such as the Paris Convention for the protection of Industrial Property Rights 1883; the World Intellectual Property Organisation 1967; the Trade Related Aspects of Intellectual Property Rights (TRIPS) 1995 *et cetera*.

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[1]Muhammed Miah and Adnan Omar, [2012], 'Technology Advancement in developing countries during Digital Age' *International Journal of Science and Applied Information Technology* (2012) (1) (1) 30

[2] W Cornish, *Intellectual Property: Patent, Trademark, Copyright and Allied Rights* (3rd edn, London; Sweet & Maxwell) 148

[3]Kayode Joseph Onipede 'Technology Development in Nigeria: The Nigerian Machine Tools Industry Experience' (2010) (1) (2) *J Economics*, 85

[4]Adekola Tolulope Anthony, Eze Sunday Chinedu 'Intellectual Property Rights in Nigeria: A Critical Examination of the Activities of the Nigerian Copyright Commission' *Journal of Law, Policy and Globalization* Vol.35, 2015,55

[5]Oladiran Akinsola Ayodele and Falade Olugbenga Damola 'Patentability of Inventions Under the Nigeria's Patents and Designs Act: An Examination' (2017) (8)(2) *NAUJILJ* 48

[6]Susumu Watanabe 'The Patent System and Indigenous Technology Development in the Third World' available at < https://link.springer.com/chapter/10.1007/978-1-349-17907-7_8> accessed on 15 April, 2024

[7]Patents and Designs Act cap. P2 Laws of the Federation of Nigeria (LFN) 2004

The conditions for the grant of patent on technological inventions in Nigeria are contained in section 1 of the Patents and Designs Act. For a technological invention to be granted patent and enjoy the exclusivity of rights as stated above, it must be a new invention, which results from inventive activity and is capable of industrial application. The above conditions of newness, inventive activity and industrial application are also the three basic conditions for the grant of patent rights in Nigeria.[8]

2. Conceptual Underpinnings

Patents

Patent is a form of industrial property which is a component of intellectual property law. It is a monopoly right granted by government of a country to a person who has invented a new and useful product or who has made an improvement of an existing product for a limited period of time. The monopoly right extends to the invention of a new process of making an article. The instrument by which such monopoly grant is made is known as 'patent'.[9] A patent conveys to its owner the right to prevent others from making, using, selling and offering for sale, importing or otherwise exploiting the patented invention within the territories of the country of grant.[10] It is regarded as a form of social contract between the inventor and the society whereby the inventor is conferred with the exclusive right to exploit his invention while he discloses the technical details of the invention to the public for their knowledge.[11] The monopoly right extends to precluding others from the act of applying a patented process or carrying out any of the above mentioned acts in respect of a product obtained directly by means of the patented process.[12]In this work, patent refers to the protection conferred by law on inventors and innovators of products that guarantees exclusive monopoly for a period of time.

Technological

The word 'technological' is an adjective derived from the noun 'technology'. It simply entails pertaining to, associated with, produced or affected by technology, especially in relation to improvements resulting from the application of technical advances in industry, manufacturing, commerce and the arts.[13] As used in this work, it qualifies 'inventions', meaning inventions relating to technology.

Development

Development has been defined as the process in which someone or something grows or changes and becomes more advanced.[14] It is a process that creates growth, progress, positive change or the addition of physical, economic, environmental, social and demographic components. The purpose of development is a rise in the level and quality of life of the population, and the creation or expansion of local regional income and employment opportunities, without damaging the resources of the environment. Development is visible and useful, not necessarily immediately, and includes an aspect of quality change and the creation of conditions for a continuation of that change.[15]

3. Conditions for Patent Grant in Nigeria

It is not all technological inventions that are patentable or suitable to be granted patent under the law.[16] In Nigeria, patentability is governed by the Patent and Design Act[17] and the law provides the basic conditions for the grant of patent under section 1(1) that 'an invention is patentable- (a) if it is new, results from inventive activity and is capable of industrial application; or (b) if it constitutes an improvement upon a patented invention and also is new, results from inventive activity and is capable of industrial application.' From the above provision, three conditions for the grant of patents clearly stand out, they are: (i) An invention must be new (novelty); (ii) must be the product of an inventive activity; and (iii) must be capable of industrial application. It must however be noted that, an invention which constitute an improvement upon a patented invention but is new, results from an inventive activity and is capable of industrial application is equally patentable. The above three conditions will be considered *seriatim*.

Condition of Newness or Novelty

According to section 1(2) of the Patent and Design Act, an invention is new if it does not form part of the 'state of the art.'[18] This means that an invention is new or novel if it has a new character or features that is not part of the present

[8] Patents and Designs Act 2004, Section 1(1)
[9] Choudhary DN *Evolution of Patent Law: Developing Countries' Perspective* (Capital Law House, 2006) 1
[10]Poltorak, A. I & Lerner, P.J. (2011) *Essentials of Intellectual Property Law, Economics and Strategy* 2nd edn. New Jersey: John Wiley & Sons, Inc. P.2
[11]Asagh J.M. 'The Digital Age and Problems of Protection of Intellectual Property Rights in Nigeria' (1)(1) *Frontiers of Nigerian Law Journal* 106.
[12] Section 6(1) PDA
[13] Henry Alexander and others (n14) 1288
[14]Cambridge Dictionary 'Development' <https://dictionary.cambridge.org/dictionary/english/development> accessed 10 March 2024
[15]Society for International Development 'Issues in Development' <https://sid-israel.org/en/what-is-development/ > accessed 10 March 2024
[16] Blanco White, Robin Jacob and Jeremy Davis, *Patent, Copyright and Industrial Designs* (2nd ed) 21
[17]Patents and Designs Act cap. P2 Laws of the Federation of Nigeria (LFN) 2004
[18] Section 1(2)

knowledge available in its field of knowledge.[19]The 'state of the art' as used in the section of the law above is in this respect determined by looking at all the information relating to the field or knowledge which has been made available to the public anywhere and at any time by written or oral description before the filing of the patent application.[20] Newness in this context means new to the public.[21] This is so because even where an invention is secretly known and used by someone for a long time even for a century, it can still be considered new in so far as it has not become of public knowledge. Newness of an invention is the cynosure or the most important conditions for the grant of patent in Nigeria. For an invention to be patentable, the discovery or development must be completely unknown anywhere in the world at the time whether by means of a written or oral description by use or in any other way before the application for the patent is filed. The test of newness is thus universal- that is new to the world as a whole. The parameters for determining novelty are objectively provided as the court held in *Genetech Inc's Patent case*[22] 'to form a part of the art, the information given (by the user) must have been made available to at least one member of the public who was free in law and equity to use it.' the strict application of this requirement underscores the importance of enhancing the value of information and ideas; otherwise; they may become subject of misapplication.

Although the test of newness or novelty appears quite simple, its practical application usually reveals a complexity associated with it. For instance, the sum total of man's past and present knowledge keeps growing, making it increasingly difficult to devise something that is entirely new or novel.[23] This may have informed the Nigerian legislature to include section 1(1)(b) in the Patent and Design Act to allow the patentability of an invention which is an improvement on an already patented invention as it may be difficult though not entirely impossible to come up with an entirely new invention. In the case of *Vander Lely v Bamford,*[24] the patentee claimed a hay raking machine in which the rake wheels were turned not by an engine but by contact with the ground. The patent was held to have been anticipated by a photograph in a journal which showed a hayrake with this feature. The rationale behind the condition of newness or novelty for patentability is simply to prevent someone from obtaining monopoly for that which someone else was already using publicly.[25] To permit this would be unfair in two ways. Firstly, such a person would obtain monopoly without giving the public anything fresh or in addition.[26] Secondly, such a person would be able to stop another person from doing that which before the patent grant was perfectly impossible.

On the other hand, the insistence on the condition of newness when weighed against the goal of technological development is unfair and inequitable to Nigeria and other developing nation in general. The condition is capable of discouraging a high meritorious local invention and frustrating any inventor, particularly a lone indigenous inventor with paucity of data and tools at his disposal.[27] In some countries, the standard of novelty recognised by law is restrictive and confined to the country's geographical boundaries and that in such cases, an invention is considered new if it is not known or made available to others within that particular country. This kind of condition for newness is suitable to the Nigerian environment to burst technological development. Nigeria in this case to effectively do this must amend the Act and as well withdraw from any international convention or treaty requiring the recognition of patent from foreign nations. If patent protection is weak or non-existent, industries will develop that rely for their existence on their ability to ignore the international patent system.[28] Localisation of patent is therefore apposite for the technological development of Nigeria.

Most countries have decided to participate in the international intellectual property system. It is easy to understand why technologically advanced countries who are home to successful multinational competitors would choose to participate in the international intellectual property system. For them, it is clearly advantageous to do so. Membership in an international system for the protection of intellectual property permits their firms to exploit intellectual property rights in the markets of all of those countries that join the system. But many of the participants are countries that do not have these advantages.[29] For instance Nigeria does not have this advantage as there is little or no invention in the country that can meet the condition of newness.

Even in developed countries, there are limitations as to recognition of patents of foreigners based on the principle of reciprocity, for instance the United States has recently taken legislative[30] and diplomatic action to assure that technical innovations developed within the United States receive reciprocal patent protection in other countries. If a country fails to provide the same protection to innovations as is provided in the United States, innovations originating in that country

[19] JJ. Kur *Intellectual Property Law and Entrepreneurship in Nigeria: Principles and Practice* (Aboki Publishers, 2015) 94
[20] Section 1(3)
[21] Ugwu and Shikyil, *Intellectual Property Law and Practice in Nigeria: An Introduction* (Jos: Mono Expressions Ltd 2009) 168
[22] (1963) RPC 204
[23] AA. Adedeji 'An Overview of the Nigerian Patent Law' (2008) (1)(1) Lead City University Law Journal 186
[24] R Osamor 'Eligibility for Patent Protection in Nigeria (2001) 5 *NLPP* 100
[25] Jeremy Philip and Firth, *Introduction to Intellectual Property Law* (2nd edn London, Butterworth Publishers, 1990) 46
[26] Cornish w *Intellectual Property: Patent, Trademark, Copyright and Allied Rights* (3rd edn, London; Sweet & Maxwell) 148
[27] JJ Kur *(n19)* 95
[28] Kitch, Edmund W. 'The Patent Policy of Developing Countries' (1994) *Pacific Basin Law Journal*, (13)(1) 166
[29] *Ibid.*
[30] the Semiconductor Chip Protection Act of 1984; and The International Computer Software Protection Act of 1985

will be denied protection in the United States. In addition, trade sanctions could be imposed on products sought to be imported into the United States from that country. The general idea of such measures is to minimize copying of American innovations abroad and to improve the ability of American enterprises to compete in the international market. Most Third World countries find themselves facing the same type of trade imbalance as the United States. They also find themselves strapped by large debts, to the point of default, arising in considerable measure from such trade imbalances. This negative balance of trade is exacerbated by the higher prices for imported goods that are caused by import monopolies enjoyed by foreign enterprises in the form of patents. Participation in the international patent system by developing countries suggests that these countries perceive, as a matter of public policy, and contrary to the views of certain economists, that their participation will lead to an increased level of economic development. This perception appears to be based on a fundamental assumption that there is a causal relationship between a developing country's participation in the international patent system and its economic development.[31]

Condition of Inventive Activity

The second condition for patentability in Nigeria is that the invention must be the product of an inventive activity.[32] According to Section 1(2) of the Patent and Design Act, an invention is said to results from inventive activity if it does not obviously follow from the state of the art, either as to the method, the application, the combination of methods, or the product which it concerns, or as to the industrial result it produces.[33] Inventive steps differs from newness in that it goes beyond newness as the new product must be a product of creative idea, that is the invention must not simply be something which has not previously existed, it must owe its existence to the exercise by the human intellect of a creative thought process.[34] This means that, invention derived through incantation or metaphysics cannot be patented. An invention is considered as involving an inventive step if, having taken into account any prior art, such inventive step would not have been obvious to a person having ordinary skill in the art. The test applied to assess inventiveness may vary on a case-to-case basis depending on the nature of the invention. The test of inventiveness is however objective as to what a skilled man in the field of the invention 'could' have done rather than 'would' have decided to do.[35]

The requirement of inventive step was not part of any British Patent Laws. It was not until three centuries after the first patent law when Britain had secured its pride of place among the industrialised nations that it deemed it necessary to bring this requirement into its Patent Act, in 1949. The test of inventiveness under patent law is thus assessed against the background of prior knowledge or prior art based anywhere and at any time. This burdensome standard especially as in Nigerian Act without limitation is unfair and inequitable especially in the development of indigenous inventions. This is because first, prior use of the knowledge to members of the indigenous community constitutes making the information publicly available. The practical position of the requirement of inventive step is clearly aimed at facilitating economic exploitation of inventions and it is against the developmental needs of Nigeria. It is submitted that the condition for inventive activity as a ground of patentability be abolished. The limited condition of novelty alone suffices as the very act of creating and identifying that which is new whether or not it is sufficiently inventive would seem to be an intellectual task of sufficient inherent merit to deserve protection on its own account.

Condition of Industrial Application

The third condition for patentability emphasises the importance of practical application of an invention. For an invention to be patented, it must transcend the realm of mere ideas or theory and be capable of being made or be a means of making a thing or achieving concrete end results. Patent are thus traditionally granted to only industrially useful things such as new machines, chemical compounds and materials and processes for making such things or otherwise achieving a useful result. The inclusion of the industrial application as a condition for patentability in the Nigerian law constitutes legal setback to indigenous innovative activity and has the potentials of a double edge sword, cutting against the interest of the indigenous people in their effort to have traditional medical knowledge and other knowledge receive patent protection. This position can be justified from the perspective that, Nigeria unlike other developed nations cannot consider herself as par industrially with most countries which are parties to international convention on patent and who, having gone through a long period of industrialisation, now run a highly industrial and technological economy.[36] Nigeria is not an equal contracting partner in international patent conventions since the country has very little if any inventions to protect in any other member country; she merely remains a market for other technological advanced country.[37]

Non-Patentable Invention

Aside the condition for patentability discussed above as provided for under section 1(1) of the Patent and Design Act, the Act also exclude certain items from been patented whether *vel non* they fulfil the conditions of patentability. Section 1(4) and (5) of the Act provides that:

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[31] Samuel Oddi 'The International Patent System and Third World Development: Reality or Myth?' *Duke Law Journal* (1987) 831
[32] Patent and Design Act 2004, section 1(1)(b)
[33] Patent and Design Act 2004, section 1(2)
[34] Jeremy Philip and Alison Firth, *(25)* 52
[35] Uloko G. *Modern Approach to Intellectual Property Laws in Nigeria* (Lagos; Princeton Publishing Co., 2010) 62
[36] Nasir J 22
[37] *Ibid.*

(4) Patents cannot be validly obtained in respect of-
(a) plant or animal varieties, or essentially biological processes for the production of plants or animals (other than microbiological processes and their products); or
(b) inventions the publication or exploitation of which would be contrary to public order or morality (it being understood for the purposes of this paragraph that the exploitation of an invention is not contrary to public order or morality merely because its exploitation is prohibited by law).
(5) Principles and discoveries of a scientific nature are not inventions for the purposes of this Act.

There are three basic express exclusions from patentability as provided under the Act. Firstly, plant or animal varieties, or essentially biological processes for the production of plants or animals are excluded from patentability. In other words, patents are not issued for natural occurring substance because the product could not be called a new manufacture. On the other hand, microbiological processes and their products can be patented where they meet the requirement of newness, inventive activity and industrial application. The implication is that, the Act encourages research into the field of microbiology which is not well developed in Nigeria, so as to push forward the development of technology in the field.[38] The above provision is almost on all fours with Article 27(3)(b) of the TRIPS Agreement. Secondly, inventions contrary to public order or morality are prohibited from being patented by the Act. However, the Act failed to define the bench mark for public order or morality in a country like Nigeria that has a multi-ethnic, cultural and religious situation where the yardstick and parameters for accessing morality differs among ethnic grouping, social orientations and religious lines and tribal dichotomy. Lastly, the Act excludes principles and discoveries of a scientific nature from been patented.[39] It is submitted that the general condition of industrial application has already covered the area of this exclusion which is in the realm of ideas. Consequently, the exclusion of the principles and discoveries of a scientific nature under the Act is superfluous and can be expunged from the Act without affecting the current position of the law.

4. Impact of Patent Grant on Nigeria's Technological Development Drive

Historically, the origin of the first patent scheme dates back to over 500 years ago and is traceable to Venice in Italy, where a law of 1474 rewarded inventors of new objects with a limited monopoly, provided such invention was fully disclosed to the State.[40] In Nigeria, the historical development of the patent system is often traced to the 1879 Patent Conference held in Paris, where it was decided that the patent laws and systems of the colonial masters be extended to the colonies.[41] A domestic law on patent in Nigeria was later introduced in 1900 with the proclamation of the Patent Ordinance[42] which was made applicable only in Lagos, in the same year there was the Patents Proclamation Ordinance of 1900[43] applicable only to the then Southern Nigeria and subsequently the Patents Proclamation Ordinance of 1902[44] applicable to the then Northern Nigeria. Today, the extant law applicable in the whole country is the Patent and Design Act 2004. The patent system still appears to follow the basic assumptions intuitively applied for the last 500 years after its origin- that a state benefits from new inventions, while the creation of inventions is granted exclusivity of rights to the invention as incentive. Throughout this history there has been a continuous tension and an ever-shifting balance between the public interest in having access to the benefits of technological inventions and the private interests of patent owners in fully exploiting the exclusive rights afforded them.[45] The grant of patent has negative and positive implications on the technological development drive of Nigeria as a developing country and even on other developed countries. An appraisal of its benefits and disadvantages is considered hereunder.

A number of arguments can be advanced for the proposition that the grant of patents by a developing country like Nigeria aids its development. Patent serves as an incentive for technological invention. The invention of certain new products may require large investment and entails a high risk of failure. Such an adventure may be discouraging to embark upon except with assurance by way of patent that a successful inventor will be allowed monopoly for a given period to reap the benefit of labour and ideas by way of patent. Patent therefore is a driver of invention. Patent increases the amount of technological knowledge available to the public through disclosure of detailed description of the invention to the patent office. This knowledge when improved upon can leads to technological advancement. The grant of patents also promotes the availability of inventions within the country. Patents promote development by increasing the amount of foreign investment in the developing country, both by patent owners and others. It also increases the transfer of technology that supports industrial development.[46]

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[38]Akintola S 'Intellectual Property Rights Issues Arising From Biomedical Research: Problems and Challenges for Nigerian law' (2011) *Unib Law Journal* p.122
[39] Patents and Designs Act section 1(5)
[40] JJ Kur (n19) 36
[41] Edith Penrose, *The Economics of the International Patent System* (John Hopkins Press, 1951) 110
[42] Patent Ordinance No.17 of 1900
[43] Patents Proclamation Ordinance No. 27 of 1900
[44] Patents Proclamation Ordinance No. 12 of 1902
[45]Samuel Oddi 'The International Patent System and Third World Development: Reality or Myth?' *Duke Law Journal* (1987) 831
[46]Teece, 'Technology Transfer by Multinational Firms: The Resource Cost of Transferring Technological Know-how' (1977) *ECON. J.* (87) 242.

On the other hand, it is equally evident that there are a significant number of inventions that would be made irrespective of the availability of patent protection.[47] In addition, there are inherent incentives provided to the inventor outside of any patent system, such as the potential for secrecy, the competitive advantage of being first on the market, and the possibility of developing source recognition of the product (product differentiation).[48] These non-patent incentives may well provide adequate inducement for many types of inventions, which may be categorized as non-patent-induced inventions. The patent system is complicated, by the fact that the patent law do not distinguish, and appear incapable of distinguishing those inventions that are patent induced from those that are non-patent induced and it protects all inventions satisfying the conditions for patentability under the law. The patent system also has enormous negative implications on Nigerian technological drive. The first is the underutilization of inventions that are protected but would have been produced without a patent system.[49] What could have been obtained for free must now be paid for in the form of the price demanded by patent owners who are the sole source of patented inventions. Even if licensed to others, the royalty-enhanced price must be paid.

A Second negative implication of patent grant is the abuse of the patent monopoly, including antitrust violations and patent misuse. These include price-restrictive licensing, tie-in sales, exclusive grant-backs, and patent pooling, as well as other misuses like attempting to extend the patent monopoly by dilatory prosecution of patent applications, filing closely related 'improvement' patents, and extending royalty payments beyond the term of the patent *et cetera*. Another negative implication of patent grant is the research expenditures that competitors will make trying to avoid patent rights owned by others. In this way an inventor may try to device and different inventive activity and it would appear that 'inventing around' rather than direct investment in solving previously unsolved problems tends to waste research resources. Patent grant also exhibits negative implication when companies invest resources to secure patents in a given product area simply to preclude competitors from marketing similar inventions, while having no intent to market or use such inventions themselves.[50] These 'blocking patents' make it more difficult for competitors to market within this blocked product area, thereby denying consumers access to competing products and stifling the technological growth of the nation. Patent system may also inhibit inventive activity.[51] There is little incentive for companies to invest in developing products in an area heavily covered by the patents of competitors. Even if research activities were directed to this area, the cost of providing a non-infringing solution would, in all likelihood be higher, this in essence discourages technological drive.[52]

Another negative implication for patent system is the apparent over-allocation of resources to applied research as compared to basic research. Because it is more likely that inventions will be made in developing products or methods that have immediate industrial application, investors may forego allocation of resources for basic research in order to win the 'lottery' for a competition-protected invention.[53] The grant of the patent precludes domestic competition; thus, local enterprises cannot copy and invent or sell the patented invention within their home country or compete in the export market, even in countries where the patented invention is not protected. The underutilisation cost is compounded by the patent owner's control of the import market for the patent invention, which also precludes imports from countries where the invention may be legally produced. This clearly stifles the technological development of a nation and continually makes it import dependent. Inventions in developed countries tend to be, by definition, the newest technology, whereas many developing countries have a pressing need to assimilate state-of-the-art technology.[54] Nigeria like many other developing nations is struggling to achieve the state of technological advancement of other developed nations and have not stated thinking of new technology other than those already in use in other country. Patent in Nigeria therefore strengthens the control of the Nigerian market by the foreign patent owner.

Despite the monumental disadvantages of patents, Fritz Machlup[55] suggested that patent should be maintained. According to him:

> If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one. But since we have had a patent system for a long time, it would be irresponsible on the basis of our present knowledge, to recommend abolishing it.

Fritz Machlup however restricted his suggestion to developed nation like the United States.[56] Edith Penrose[57] was on his part in 1951 was highly critical of the economic justification for developing countries to participate in the international patent system. According to him: 'In view of the desirability of encouraging the development of these countries and the

[47] *Ibid.*
[48] Samuel Oddi *(n14)*
[49] Donald Turner, 'The Patent System and Competitive Policy' (1969) (44) *N.Y.U. L. REV*. 450
[50] *Ibid.*
[51] *Ibid.*
[52] *Ibid.*
[53] *Ibid.*
[54] Greer, The Case Against Patent Systems in Less-Developed Countries, (1973) (8) J. INT'L L. & ECON. 223
[55] Fritz Machlup *An Economic Review of The Patent System* (Comm. Print 1958)
[56] *Ibid.*
[57] Edith Penrose,

fact that foreign patents tend more to restrict than to advance their industrial technique, such countries should be exempt from any international patent arrangement.'[58] The above suggestion may be as a result of the fact that in contrast to a developed country, a developing country may not need-at its present state-additional inventions that are new, useful and nonobvious in a developed country's sense of these standards. The developmental needs of many developing countries may be far more basic: they may lack the capability of assimilating even the state-of-the-art into their industrial base.[59] Also, the reality is that the overwhelming majority of patents granted by developing countries are granted to foreigners.[60] However, many developing nations have not taken seriously the suggestions by Edith Penrose as they have become part of the international patent system after his publication. Nigeria also in disregard of this suggestion has become party to several international treaties on patent including Patent Cooperation Treaty,[61] Patent Law Treaty,[62] Paris Convention for the Protection of Industrial Property,[63] and the Convention Establishing the World Intellectual Property Organisation, WIPO.[64]

The most cost-effective manner for a developing country to obtain any benefits associated with an invention is, of course, to be free of any patent restraints.[65] An interesting example of the benefit to developing countries derived by not granting patents on a particular category of inventions was discussed in a recent Report from the Argentina Office of Technology Assessment. It was alleged that SmithKline Beckman Corporation and American company based in Philadelphia lost approximately one-half of the market for its trademarked 'Tagamet' ulcer-treating medication in Argentina. This loss was attributed to the Argentinean patent law that excluded pharmaceuticals from patent protection. A generic producer in Argentina copied the unpatented compound and began to market it in competition with 'Tagamet'. Overall, Smith Kline alleged a loss of $50 million in revenue because of the lack of patent protection on pharmaceuticals in numerous developing countries.[66]

The 'Tagamet' narrative is a classic example of a nonpatent-induced invention, insofar as Argentina and other developing countries[67] and developed[68] alike- that do not protect pharmaceuticals are concerned. SmithKline was well aware that these countries did not provide such protection and most certainly would not invest any additional resources in order to develop the 'Tagamet' invention on the basis of being able to obtain patents in those countries. The $50 million in so-called lost revenues presumably resulted in significant benefits to developing countries not protecting pharmaceuticals, in the form of resource retention, development of local enterprises, and consumer savings. These benefits result when generic drugs may be copied (without the attendant developmental costs) and then marketed in competition with the originator, not only by local manufacturers, but also by those in the international market. Had Argentina and other countries granted patents on the pharmaceutical 'Tagamet', there is little doubt that the cost to consumers and the net social cost to the developing country would have been in excess of those actually experienced.

5. Conclusion and Recommendations

Inventions are necessary for the technological development of every nation. For a society to move from the crude instruments of primitive man to the most complex automated devices of modern society and continue to remain developed, it most embrace and encourage technological inventions. There has been a continuous tension and an ever-shifting balance between the public interest in having access to the benefits of technological inventions and the private interests of patent owners in fully exploiting the exclusive rights afforded them. In other to protect the interest of society and at the same time protect the intellectual property of technological inventors, many countries have enacted patent laws and entered into international treatise to protect their patent rights even in other countries. The main purpose of patent rights and intellectual property as a whole is to provide incentive for innovation and creativity which provides society with a steady stream of technological innovations for development and at the same time enable inventors to benefit from

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[58] *Ibid.*

[59] Samuel Oddi

[60] A study by the United Nations Conference on Trade and Development (UNCTAD) in 1974 reports: 'An overwhelming majority (84 per cent) of the patents in developing countries is owned by foreigners, mainly multinational corporations of five developed market-economy countries,' namely: United States, Federal Republic of Germany, Switzerland, United Kingdom and France. U.N. Dep't of Economic & Social Affairs, UNCTAD Secretariat and Int'l Bureau of the WIPO, The Role of the Patent System in the Transfer of Technology to Developing Countries at 92, U.N. Doc. TD/B/AC.11/19 (1974) [hereinafter UNCTAD REPORT].

[61] Which became effective in Nigeria on the 8th day of May, 2005

[62] Which became effective in Nigeria on the 28th day of April, 2005

[63] Which became effective in Nigeria on the 2nd day of September, 1963

[64] Which became effective in Nigeria on the 9th day of April, 1995

[65] Samuel Oddi *op cit*

[66] *Ibid.*

[67] The following developing countries do not protect pharmaceuticals: Argentina, Bangladesh, Bolivia, Brazil, Chile, Colombia, Ecuador, Egypt, Ghana, Guatemala, Honduras, India, Iran, Iraq, Kampuchea, Kuwait, Laos, Lebanon, Libya, Mali, Mexico, Mongolia, Morocco, Pakistan, Paraguay, Peru, Portugal, South Korea, Syria, Taiwan, Tangier Zone, Thailand, Tunisia, Turkey, Uruguay, and Venezuela.

[68] The following developed countries do not protect pharmaceuticals: Canada, Finland, Greece, Monaco, Norway, USSR and Democratic Republic of Germany.

their technological inventions and as well prevent others from copying or unfairly gaining from the inventor's creativity and investment.

In Nigeria, the Patents and Designs Act is the principal legislation governing patent and it provides for three conditions for the grant of patent in Nigeria. According to section 1(1) of the Act that for an invention to be patentable (a) it is new (b) results from inventive activity and (c) be capable of industrial application. An invention is said to be new if it has a novel character or features that is not part of the present knowledge available in its field of knowledge or if it does not form part of the 'state of the art.' An invention is said to results from inventive activity if it owes its existence to the exercise by the human intellect of a creative thought process. And an invention is capable of industrial application if it transcends the realm of mere ideas or theory and is capable of being made or is a means of making a thing or achieving concrete end results.

It is found that enterprises in Nigeria as a developing nation finds it difficult to meet the conditions of patentability as set out in the Patents and Designs Act as a result of many factors including lack of capital, good science education and social facilities like stable electricity *etcetera.* And as such overwhelming majority of patents granted by developing countries are granted to foreigners. A patent therefore has positive and negative implications on Nigeria's technological development drive. On one hand, patent encourages innovation and invention and the development of the country by increasing the amount of foreign investment. However the negative implication is damning as patent not only precludes domestic competition; it inhibit inventive activity since there is little incentive for domestic companies to invest in developing products in an area heavily covered by the patents of foreign competitors from developed countries; also, patent has the capacity of discouraging a high meritorious local invention and operate to frustrating any inventor, particularly a lone indigenous inventor with paucity of data and tools at his disposal.

It is therefore recommended that Nigeria should discontinue to participation in international patent system or restrict foreign patent in core areas of the economy to foster technological development of the country in such areas. This is because there is a fundamental distinction between patents granted in developed countries and those granted in developing countries. While developed countries have the state of the art to withstand competition and develop upon registered patent to create a new product, this cannot be said of developing countries like Nigeria. The most cost-effective manner for a developing country to obtain any benefits associated with an invention is, of course, to be free of any patent restraints in certain core areas of importance to the nation. It is also recommended that patentability be localised. The standard of novelty to be recognised under Nigerian law should be restrictive and confined to the country's geographical boundaries and in such cases, an invention is considered new if it is not known or made available to others within Nigeria. It is equally recommended that the condition for inventive activity as a ground of patentability be abolished to foster technological development. The limited condition of novelty alone suffices as the very act of creating and identifying that which is new whether or not it is sufficiently inventive would seem to be an intellectual task of sufficient inherent merit to deserve protection on its own account. Finally, it is recommended that section 1(5) of the Patents and Designs Act be expunged from the Act since the general condition of industrial application provided under section 1(1) of the Act has already covered the area provided by the section.