UTILITY MODEL-A TOOL FOR ECONOMIC AND TECHNOLOGICAL DEVELOPMENT OF AFRICA: CASE STUDY OF NIGERIA

OLADIPO ADEMOLA

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ABSTRACT

Utility model -A tool for economic and technological development: A case study of Nigeria. This research study focuses on various aspects of utility model protection system which provides a supplementary alternate system to patent and industrial design protection system in order to protect the inventions particularly those of incremental nature having lower level of inventiveness. Since the innovators of these small inventions are unable to protect their inventions under the patent law for the grant of patent due to higher level of inventiveness, they have no other choice but to fell discouraged and stranded particularly in the countries where such system for protecting these inventions, does not exist. This study also looks in to the role of utility models for economic and technological development. This system has been successfully exploited by Germany, the past for technological up gradation and economic development and currently also being exploited by developing countries like China. The study also had deep insight into the legal frame work relating to utility model system of these countries. While considering the various issues concerning this system including the contribution to economic and technical development. The study also analysed the suitability of utility model system to developing countries including Nigeria particularly to encourage the intellectual property creation activities of SMEs and small innovators as currently such activities in Nigeria appear to be very low as compared to other developing countries.

DECLARATION

I, Oladipo Ademola, declare the work presented in this research project is my original work except where sources have been acknowledged. The work has never been submitted, nor will it ever be, to another university for awarding of a degree.

Signed ……..

Date ……

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I have received a lot of assistance during the preparation of my research project. I am grateful to my supervisor for the insightful comments that have helped to shape this project. I would also like to express my special gratitude to the following-people, the MIP lecturers as well as the staff of Africa University for being there for my throughout the duration of the programme. Mr. George Mandewog for his sound advice and guidance in shaping my research proposal, officials from various organizations I contacted during the research phase for their insightful comments WIPO, ARIPO. Much credit is also extended to those who have helped me through this journey.

DEDICATION

To God the Almighty before everything else, for the gift of life, conscientious mind and perseverance I thank you. I dedicate this work to my loving wife and parents.

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LIST OF ABBREVIATIONS

ACIP	Advisory Council of Intellectual Property
ARIPO	African Regional Industrial Property Organization
ASSOCHAM	The Associated Chambers of Commerce and Industry of India
CII	Confederation of Indian Industry
CSIR	Council of Scientific and Industrial Research
DRDO	Defence Research and Development Organisation
EPC	European Patent Convention
EPO	European Patent Office
EU	European Union
FDI	Foreign Direct Investment
FICCI	Federation of India Chambers of Commerce and Industry
FTC	Foreign Technology Collaboration
GDP	Gross Domestic Production
GERD	Gross Expenditure on Research and Development
GNE	Gross National Expenditures
IPAG	Industrial Property Advisory Council
IPR	Intellectual Property Rights
IPRIA	Intellectual Property Research Institute of Australia
JIPA	Japan Intellectual Property Associat

CHAPTER 1

1.1 Introduction

Utility model are a form of patent-like protection for mirror or incremental innovation. They protect the functional aspect of a product, utility model are very common in the mechanical, optical and electronic fields and played a role in the industrial development of countries like Germany and Japan as well as republic of Korea.

With a view to fostering local technological capacity, this study examines one category of intellectual property, namely utility models, and their potential as a tool for spverring innovation, particularly in developing countries like Nigeria.

To achieve this, the study draws from past experience to analyze their potential to accommodates small-scale or incremental innovation in both developed and developing countries.

Experts in the field of intellectual property, suggests that the specific characteristics of UM may serve as a useful tool to promote the type of innovation generated in developing countries. These includes, it enables arhsmas to secure protection for types of innovation that do not meet the stringent novelty and inventive requirements of patent law, which make it possible to increase the role of traditional innovators and artisan in

economic development acting as a catalyst to enhancy the level of innovation sustainable development/alternation powered by renewabto energy resrea

1.2 Background

1.2.1 What is a Utility Model

There is no global acceptance of the term "utility model" due to there being fundamentally different concepts from one country to another. If one examines national laws, one finds that utility model protection is referred to in Australia as "innovation patent", in Malaysia as "utility innovation", in France as "utility certificate", and in Belgium as "short-term patent". Some systems define utility models as intangible subject matter such as technical concepts or inventions or devices, while others anchor their definitions to three-dimensional forms. Yet others profess to grant "utility model" protection which, in actuality, is equivalent to patent protection without examination and for a shorter duration. Thus, "utility model" is a generic term which refers to subject-matter that hinges precariously between that protectable under patent law and sui generis design law.[3] It is not an accepted or clearly defined legal concept within the intellectual property paradigm.

The confusion reflects the fact that within the international arena, a consideration of the nature and extent of protection under the various national "utility model" laws reveals little consensus. Indeed, the utility model law is not a standard feature within the intellectual property regime of many states. There are currently approximately 75

countries which provide, in some form or another, utility model protection.[4] Included amongst the countries which do not have a utility model regime are significantly the United States, United Kingdom and Canada. However, major industrial nations which have adopted the utility model regime include Japan, South Korea and Germany.

The ambiguity of the term "utility model" is also reflected in the cross-referencing and inter-dependency of priority periods between utility model, industrial design and patents. Thus, a period of priority can be secured for an application for industrial design based on the filing date of a utility model; and a period of priority can be secured for a utility model application by virtue of a right of priority based on a patent application (and *vice versa).*[5] Whilst there is no specific reference to utility model protection under the TRIPS Agreement, it is arguable that by reference to Art. 2(1), TRIPS Agreement, the relevant provisions of the Paris Convention provisions (including Art. 1(2)) are extended to all WTO countries. However, we are once again left with our initial position: the Paris Convention does not demand that signatories of the Convention implement utility model laws.

Nevertheless, the term is bandied about by policy makers, legislators and jurists to refer to a second tier patent system, offering a cheap, no-examination protection regime for technical inventions which would not usually fulfil the strict patentability criteria. This is an important factor: utility model protection is accorded, cheaply and quickly, to inventions or innovations, many of which cannot gain protection under the patent

regime. As far as one can perceive, there are three traits common to all the national "utility model" laws from a global perspective, which are that:

All utility model laws confer exclusive rights on the proprietor of the right (as opposed to an anti-copying right)

Novelty is a criterion in all utility model systems, though the standard of novelty varies widely.[6]

Registration is a requirement but that usually there is no substantive examination of applications.

Most utility model laws protect the technical character of the invention, as opposed to the ornamental function or the appearance of the product.[7]

The major points of divergence can be summarized thus:

Subject matter under protection: Some utility model laws protect only the three-dimensional form while others extend the umbrella of protection to cover technical inventions and processes. A majority of utility model laws simply adopt the domestic patent law definition of protectable subject matter.

Granting Procedure: Many systems adopt a simple registration procedure with cursory examination; while a few implement a detailed examination process. In practice, some examining offices offer an optional detailed search facility with the payment of supplementary fees. Other jurisdictions expressly call for a detailed search on validity to be carried out on the commencement of civil proceedings.

Substantive Criteria: Herein lies the greatest disparity between the utility model systems. While all major utility model systems adopt the criterion of novelty, the level of novelty required ranges from universal novelty, to relative novelty, to domestic novelty. A second criterion is usually, though not always, imposed in the form of inventiveness or usefulness. Again, the standard employed for the level of inventiveness varies greatly. There is also a significant propensity within current utility model laws to link the definition of the utility model to an element of industrial application.

Duration of protection: A final element of divergence is the duration of protection which varies from six years to twenty five years.

1.2.2 Overview of Different Systems

Many supporters of utility models consider them to be especially beneficial for relatively innovative developing countries that are seeking to advance their technological capacities through local innovation by SMEs. A quick overview of some of the developing nations in the Central Asian and Asia-Pacific regions in Table A (see annex) reveals that the utility model law is a popular option in the Asian region. The table also reveals that most of these laws vary greatly, especially in relation to the types of subject matter protected, the level of novelty, the requirement of inventive step, and finally the availability of requesting a substantial examination report. This is not surprising considering the lack of international guidance on this matter.

Some attempt has been made to offer a harmonized regime within the Latin American region. The Andean Community Decision 486 of 2000 establishes a Common Regime on Industrial Property for its five member countries (Bolivia, Colombia, Ecuador, Peru and Venezuela), and although the Decision does not create a unitary utility model regime, it does define the standard that must be adopted by each member. Accordingly, a utility model is considered to be a "new form, configuration, disposition of elements, of any artefact, toot, instrument, mechanism or other object or any part of the same, that permits a better or different functioning, use or manufacture of the object which incorporates or which offers any use, advantage or technical effect that it did not have previously." The term of protection is ten years from the filing date. Utility model applications can be converted upon request to patent applications as well as vice versa.[8]

An attempt has been made to create a unitary In relation to the African region, there is a unitary Annex II of the 1999 Revised Bangui Agreement of March 2, 1977, on the Creation of an African Intellectual Property Organization (OAPI) is much more detailed than the utility model provisions of the Andean Community Decision 486. It also establishes unitary IP systems so that rights granted have automatic effect in the territories of every member state/albeit subject to the relevant countries' national legislation. Accordingly, protected utility models "shall be implements of work or objects to be utilized or parts of such implements or objects in so far as they are useful for the work or employment for which they are intended on account of a new configuration, a new arrangement or a new component device, and are industrially applicable." Novelty is territorial so that an application would fail only if the implement

or object had already been publicly used or disclosed in print in the territory of a member country. The term of protection is ten years from filing date. As in the Andean Community countries, utility model applications can be converted upon request to patent applications as well as vice versa. Searches are carried out for novelty and industrial applicability. There is also an examination of applications to ensure that the subject matter does not fall under the stated exclusions, that the applications are "restricted to a single principle subject", and that "the claim or claims defining the scope of the protection sought" do "not go beyond the contents of the description".

The African Regional Industrial Property Organization Protocol on Patents and Industrial Designs (Harare Protocol)[9] defines utility models as "any form, configuration or disposition of elements of some appliance, working tools and implements as articles of everyday use, electrical and electronic circuitry or other object or part thereof in so far as they are capable of contributing some benefit or new effect or saving in time, energy, or labour or improving the hygienic or sociophysiological working conditions by means of new configuration, arrangement or device or a combination thereof and are industrially applicable." The Office carries out a substantive examination of applications for novelty and industrial application. Utility models need only be new in the designated countries. Again, applications can be converted upon request to patent applications as well as vice versa.

1.2.3 Utility Models in International and Multilateral Agreements

(i) **Paris Convention**

On the international front, utility models are recognised under the Paris Convention as industrial property. However the Convention is silent as to its definition and scope, and merely confirms that the international principles of national treatment and the right of priority is accorded to utility models.[10] Thus, Article 1(2) states:

The protection of industrial property has as its object patents, utility models, industrial designs, trademarks, service marks, trade names, indications of source or appellations of origin, and the repression of unfair competition.[11]

The ambiguity of the term "utility model" is also reflected in the cross-referencing and inter-dependency of priority periods between utility model, industrial design and patents. Thus, a period of priority can be secured for an application for industrial design based on the filing date of a utility model; and a period of priority can be secured for a utility model application by virtue of a right of priority based on a patent application (and *vice versa).*[12]

(ii) **The TRIPS Agreement**

The TRIPS Agreement[13] establishes minimum substantive standards for each of the major intellectual property regimes but fails explicitly to mention second tier or utility model protection, thus leaving WTO member countries free to formulate or reject second tier protection regimes as they see fit. Whilst there is no specific reference to utility model protection under the TRIPS Agreement, it is arguable that by reference to Article 2(1), TRIPS Agreement, the relevant provisions of the Paris Convention

provisions (including Article 1(2)) are extended to all WTO countries. But this still does not require World Trade Organization members or signatories to the Convention to provide utility model laws.[14]

(iii) **Other Patent Treaties and Agreements**

National utility model systems tend to adopt the International Patent Classification (IPC) as provided by the 1971 Strasbourg Agreement for the International Patent Classification, which facilitates the retrieval of patent documents in order to conduct effective novelty searches and determine the state of the art. Indeed, Article 1 states that the IPC covers not just "patents for invention", but also "inventors' certificates, utility models and utility certificates".

Another significant agreement is the Patent Cooperation Treaty (PCT), the purpose of which is to facilitate patent applications in more than one country. By simplifying and cheapening the process, the treaty encourages patentees to secure protection over a broader geographical range. Instead of filing separately in all countries where protection is desired, applicants may file a single application in one language with a national patent office. When doing so they can designate all those signatory countries in which protection is also sought. After the examination of the patent, the application is transferred to one of nine International Search Authorities where a prior art search is conducted. After this it is then up to the patent offices of - or acting for - the designated countries to award the patent.

The facilitated means of securing international protection that the PCT provides for patents covers utility models as well. By virtue of Article 2, the PCT clarifies that '"application" means an application for the protection of an invention; references to an "application" shall be construed as references to applications for patents for inventions, inventors' certificates, utility certificates, utility models, patents or certificates of addition, inventors' certificates of addition, and utility certificates of addition". In short, then, international applications may be for second-tier patents as well as standard ones.

1.3 Statement of the Problem

The current development of technological innovation in Nigeria demands the shift from patents protection to utility module protection to create avenue for petty innovation that is not qualify for patentability subject matter to be protected. The situation is not different from other developing countries in Africa which is characterized by low level of awareness of IP activities, low R and D expenditure and absence of strong IP in utility model protection. The inventions and creations made by many SMEs are technically low and the majority of the innovative output s is small inventions and creations. Though these small inventions and creations are not as creative as invention patents in technological sense, they also contribute to the scientific, technological advancement, economic and societal development of the country and Africa at large. Apart from the existing system for patent and design protection which does not even create an avenue for the protection of short time patent, intellectual creativity and technological innovation among SMEs are discourage, petty research or small innovative work which

have economic potential to better the lives of the people lacks the inventive step and novelty criteria for patent protection. This brings setback to the development of Small and Medium scale Enterprises in Nigeria.

1.4 Purpose of Study

- To assess the impact of utility model protection system on the economic and technological development of Nigeria.

1.5 Objectives

- To assess whether utility model is another good and valuable tool for this economic as well as technological development of Nigeria.
- To assess whether utility model would be more suitable to small innovators and Nigeria SMEs.
- To assess whether utility model provides alternative system for the promotion and protection IP in Nigeria.
- To suggest recommendations on ways to improve utility model protection system in Nigeria.

1.6 Research Questions

- What is the contribution of utility model in economic and technological development of Nigeria?

- What are the benefits of utility model to small innovators and SMEs in Nigeria?
- What is the impact of utility model as alternative system for the protection of IP in Nigeria?
- What can be done to improve the Utility model system in Nigeria.

1.7 Significant of Study

To know the impact of utility model protection system in the development of economy and technology in the promotion of grass root economic growth. Also how it can improve the environment for SMEs especially those which are engaged in an ongoing process of innovation and adaptation.

1.8 Scope of study

This was the study of contribution of utility model in Nigeria economic and technological development.

1.9 Limitation of study

Some of the limitations I may encounter during my research study includes access information, availability of enough resources both financial and human resources.

CHAPTER 2

2.0 Literature Review

2.1 Theoretical and Policy-Related Justifications for Utility Models

2.1.1 History, economics and policy of intellectual property

IPRs ostensibly exist primarily to benefit society. But this does not tell us much about the ends they are meant to serve nor how these ends ought to be achieved.

The rationale for utility models is tied closely to the patent system and its inability to extend legal rights to innovations or discoveries that fall short of the inventive step and/or novelty bars. That is to say, limits are placed on the extent to which patent law will embrace inventive activity: only inventions which fulfil certain criteria will be protected, and adjunct to this axiom is the examination procedure which seeks to ensure that the patent system is not abused by the assertion of patents on spurious inventions. The question then arises, should we leave such innovations or discoveries unprotected, lower the bars to incorporate them into patent law, or seek an alternative means of protection?

The origins of patent protection justifications lie in the ancient European state privileges which granted an exclusive right with the aim of encouraging domestic innovation and exploitation of technology - indeed, "inventive activity" was not a necessary requirement as the value lay in the dissemination of the teachings inherent in the patented

technology.[15] Furthermore, the prevailing mercantilist ethos of the time accepted the principle that a system of exclusive privileges would nurture innovative activity which would, in turn, promote the economic well-being of the country. The mercantilist regarded the state as the appropriate instrument for promoting the well-being of his country: in his view the country was regarded as a unit with national interests, irrespective of the interest of particular sections of individuals. In accordance with this, the state harnessed and controlled resources, skills and products for the purposes and profit of the state. Patent privileges were merely one species in the genus of privileges, charters, franchises, licences and regulations issued by the Crown or by local governments within the mercantilist framework.[16]

By the end of the eighteenth century, the general consensus, encouraged by Adam Smith and Jeremy Bentham,[17] was that the existence of the patent regime was justified on the basis of the reward theory. J. S. Mill summarized this view:

"The condemnation of monopolies ought not to extend to patents, by which the originator of an improved process is allowed to enjoy, for a limited period, the exclusive privilege of using his own improvement. This is not making the commodity dear for his benefit, but merely postponing a part of the increased cheapness which the public owe to the inventor, in order to compensate and reward him for the service. That he ought to be both compensated and rewarded for it, will not be denied. "[18]

The revised current theory is that patents are tools for economic advancement that should contribute to the enrichment of society through (i) the widest possible availability of new and useful goods, services and technical information that derive from inventive activity, and (ii) the highest possible level of economic activity based on the production, circulation and further development of such goods, services and information. One common way to interpret the modern patent system is as a regulatory response to the failure of the free market to achieve optimal resource allocation for invention. Once patent rights have been acquired, the owners seek to exploit them in the market-place. The possibility of attaining commercial benefits, it is believed, encourages innovation. But, after a certain period of time, these legal rights are extinguished and the now unprotected inventions are freely available for others to use and improve upon.

Patents are necessarily temporary exclusionary rights. As Geroski puts it,

"patents are designed to create a market for knowledge by assigning propriety rights to innovators which enable them to overcome the problem of non-excludability while, at the same time, encouraging the maximum diffusion of knowledge by making it public".[19]

Such rights can be converted into market monopolies if the invention so protected results in a commercial product and depending on certain factors such as the relationship between the invention and the product, which may actually be protected by more than one patent. The public goods explanation for patents posits that the possibility of acquiring such rights encourages both investment in invention and the research and

development needed to turn inventions into marketable innovations. Information about the invention as revealed in the patent and by the invention itself is diffused throughout the economy. In this context, it is helpful to conceive of a patent as a contract between the holder and the government on behalf of the citizenry. The holder receives an exclusive right over his or her invention in exchange for the payment of fees and - which is much more important - for disclosing the invention for others to learn from. Without a patent, the inventor would have no incentive to disclose it. This would be a loss for society if such lack of protection left the inventor with no alternative but to keep it secret. Such an alternative is a feasible option in several technological fields including biotechnology. But it is also true that many kinds of product would upon examination readily betray the invention that brought it into existence.

As for the creation of markets for knowledge, it might be useful here to explain why these are considered beneficial and how patents are thought to bring them into being. The explanation relates to the common situation that many patent holders are poorly placed to exploit their invention in the marketplace. Take the case of a creative but small company lacking the funds to develop and commercialise new products based upon its inventions. If such products are desirable for consumers, failure to commercialize would be a loss for society. But if the company owns a patent, a wealthier company may wish to license or buy the patent secure in the knowledge that the invention is legally protected. And if the invention were kept secret, how would bigger companies know

about it? The disclosure of patent information makes it possible for prospective users to find inventions of interest and then to approach their owners.

2.1.2 Follow-on innovation and the public domain

The "market failure" argument should not be carried to logical absurdities and countries should not accept that it is necessary to allocate property rights on *every* intellectual output of the creator. Not everything created under the sun must be awarded intellectual property protection. Limits have to be placed on the exact breadth of patent protection of innovations, and countries should take note as to the effects of widening the current patent regime. In some instances, intellectual property rights can reach untenable levels whereby the intellectual property owner becomes a monopolist of discoveries or ideas, as opposed to "inventions". For example, if we were to allow every idea or discovery to be claimed and to be exhaustively protected under intellectual property rights, what of the future generations of inventors who would need to use such basic building blocks for further innovative activities? In such an instance, they would either have to incur licensing or other transaction costs to obtain permission to use these building blocks, or else they may attempt to work around the problem by attempting to disguise any appropriation of such blocks, incurring a potential cost of litigation. The final recourse would be to work around the protected building blocks and incur costly research. The costs of creating a new invention would increase, with detrimental effects. If patent protection were structured in such a manner as to require the sacrifice of scarce resources, any societal benefits and economic rent accruing from a patent regime would

be dissipated. These arguments are also the basis upon which a high level of inventiveness is required under patent law to ensure that commonplace, obvious or mere workshop inventions are not protected.

Thus, excessive protection will act as a disincentive to future creators and certain types of basic building blocks of creativity must be left in the public domain. Where the line between the private and the public domains should be drawn is very difficult to determine but its ideal location will vary widely from one country to another, and, one may argue from one business sector to another. In countries where little inventive activity takes place, free access to technical information may well do more to foster technological capacity building than providing strong private rights over such information. In fact, technological capacity building may at certain stages of national development be best achieved by requiring foreign technology holders to transfer their technologies on generous terms rather than by trying to encourage domestic innovation by making strong legal rights available to all.[20] This suggests that developing countries should be careful not to make the rights too strong until their economies are more advanced. Historical evidence indicates that several present-day developed countries, rightly or wrongly, took such a policy decision in the past.

2.1.3 Utility Models: Theoretical and Practical Considerations

Utility models can thus be justified on both theoretical and practical grounds and these are closely related. The theoretical rationale for utility models derives from the facts that

most social welfare-enhancing inventions are cumulative in nature and that a great deal of them are subpatentable in the sense that the novelty and inventive step requirements are too high for the patent system to accommodate them. In fact, in today's industrial society different levels of innovative activity apply in different areas. Major technological breakthroughs may be more common in some industrial sectors (e.g. biotechnology and ICT) than others (e.g. electronics), but are hardly everyday occurrences in any of them.

2.1.4 Policy considerations for governments

(i) The right type of "intellectual property institutional order"?

Intellectual property systems are more than just pieces of legislation, and may best be viewed as public policy regulatory institutions. As such, they consist of the relevant statutes, rules and regulations plus the government agencies, courts and professional people involved in interpretation, implementation, enforcement and reform. Institutions are not static but evolve over time, and they operate in different ways according to the context. Thus, they may be appropriate and functional in one context but inappropriate and dysfunctional in another, and it can be very difficult to predict how well such an institution transplanted to a completely different cultural, political or economic milieu will work in practice. History can offer some pointers, or can at least help us to reflect on the likely preconditions for a successful transplantation.

(ii) Development and innovation

As mentioned above, there is a view that utility models are especially good for relatively innovative developing countries seeking to advance technological capacity through local incremental innovation. For example, Juma put forward five reasons why utility models are appropriate for such nations.[21] The first is that they enable artisans to secure protection for innovations that do not meet the stricter novelty and inventive step requirements of patent law. Second, they make it possible to increase the role of small-scale innovators and artisans in economic development and help them stay in business in the face of new technologies that might threaten their livelihoods. Third, they act as a spur to enhanced levels of innovation. Fourth, they are cheaper to acquire than patents. And finally, they may become a source of data on innovative activity and experience in technological management.

As for empirical evidence, Kumar[22] found that in the East Asian countries he studied (i.e. Japan, South Korea and Taiwan, Province of China), a combination of relatively weak IPR protection and the availability of second-tier patents like utility models and design patents encouraged technological learning. The weak IPRs helped by allowing for local absorption of foreign innovations. The second-tier systems encouraged minor adaptations and inventions by local firms. Later on, the IP systems became stronger partly because local technological capacity was sufficiently advanced to generate a significant amount of innovation, and also as a result of international pressure. India's experience is somewhat similar, except that no second-tier protection was provided. This

did not hurt the chemical or pharmaceutical industries, but may, he suggests, have hindered the development of innovative engineering industries.

2.1.5 Possible Objections

It may, on the other hand, also be argued that the rationale for utility model systems is inherently unsound. Objections relate to the fact that in essence, the choices facing policymakers in respect of subpatentable inventions are far from straightforward. They may choose to leave them unprotected, to lower the inventive step threshold so that they become patentable, or they may seek to create alternative legal means of protection. Alternatives include introducing a liability rule-based system such as a statute based tort or misappropriation law, or a hybrid property rights system such as industrial design rights or utility models. These systems could operate in place of patents or copyright, as the case may be, or could alternatively operate in parallel, so that patents and copyright could then be used only for those inventions and creative works displaying a demonstrably high inventive step or level of originality.

But there are fundamental problems with utility models as a policy solution to the question of what, if anything, should be done about subpatentable inventions. First, the fact that the utility model regime encourages a lowering of thresholds without an appropriate examination system in place may result in legal uncertainty and excessive litigation. Indeed, there is a reasonable concern that larger market players may use utility models as a means of circumventing the more stringent criteria under the patent system

and overuse the system in ways that make it hard for SMEs to compete. Certainly, the lack of substantive examination prior to grant will give rise to uncertainty for third parties when conducting infringement searches to ascertain what valid rights exist in a particular field of technology, which may act as an additional barrier to competitors.

It is difficult to test the validity of such a concern, but it is noteworthy that a survey carried out on behalf of the European Commission in 1993 found that on average 50 percent of industry in the United Kingdom, France, Spain, Italy and Germany was "partly to greatly dissatisfied by the application of the utility model system in Europe at present" with the satisfaction being greater amongst SMEs. The causes of this dissatisfaction were not totally specified but the fact that different standards exist between various countries was clearly a contributing factor in addition to any discontent that might exist about the specific features of protection in any particular country. Thus, 76 percent of the SMEs surveyed expressed a high interest in the adoption of a community wide utility model system whereas interest among larger companies was much smaller.

Secondly, hybrid systems like utility models tend to rely extensively on the argument that cumulative innovations are vulnerable to unfair copying which should not be allowed. This argument is anchored to the classical natural rights justification of the intellectual property regime, that protection is conferred in order to enable inventors and creators to reap their just rewards by preventing misappropriation. Hence, such innovations should be protected. However, herein lies a danger. Intellectual property

rights are predicated on the notion that inventions and creative works are in the public domain *except* such works that fulfil the traditional standards of novelty, inventive step, originality or distinctiveness. If we provide second and third-tier rights for inventions and works that fail to meet these standards, thereby allowing insufficiently inventive or original works to get protection by the back door, we undermine both the public-private boundary and the integrity of existing IPRs and their doctrines.[23] After all, in a market-based economy it is generally accepted that all market actors, including competitors, follow-on creators and consumers, should be allowed to freely use any work which falls short of the required standards. Indeed, as some courts and jurists have argued, copying and free riding is necessary, if not beneficial, for competition.[24] Actually, imitation is an essential stage in learning to innovate and can even be creative in itself. Admittedly, anybody with the right equipment can copy a music CD and will learn very little by doing it. But copying a new medicine, especially a complex protein-based drug, is another story entirely. Indeed, some of the world's most advanced companies learned to be creative after copying other people's inventions first.[25]

2.2 Utility model protection system justifications for utility model (Germany)

2.2.1 Economic and Innovation Climate in Germany

Germany had no coherent or unified industrial property policy until the creation of the German free trade area in the late nineteenth century. The first patent law in the German

Reich was introduced relatively late in 1877 against a background of anti-monopoly and anti-patent movements. Part of the reason for this push for industrial property protection was the change in the economic landscape of Germany. German territories, especially Prussian ones, were agrarian at the beginning of the nineteenth century. Between 1850 and 1870, however, Germany was industrializing rapidly and industrial leaders such as the Siemens firm organized pro-patent lobbies.

Today, in terms of the number of patents, Germany belongs to the leading international group. German patent output increased in recent years after an initial post-reunification downturn, n addition to higher innovation output, this general growth in patent activity may be at least partly due to companies' increasing strategic focus on legal protection for intellectual property on globalised markets.

A Deutsche Bank Report identified the following facets within Germany's economic and industrial structure:

- Germany has high labour costs coupled with too few other highly skilled personnel;
- There is a lack of innovative drive, and a reluctance to invest by SMEs - indeed, the R&D expenditures by Sweden and Finland now far exceed the German level
- The established companies are now more likely to be the major contributors towards innovation, rather than SMEs, and they generate a far larger proportion of their turnover with innovative products

- Leading German industries are the automobile industry, mechanical engineering, medical, precision and optical instruments, measurement and control engineering, textiles (technical textiles) and parts of the chemical industry.

The Report also identified that, on average across industries, German innovators first take advantage of their time lead and secrecy, with patenting coming only third. Another tactic employed by the industry is to incorporate deliberately complex technical product design, so as to discourage reverse engineering, and to use trade marks.[42] The important factor is that the German local market and industry is considerably knowledgeable as to the intellectual property regime.

2.2.2 Historical influences of design law

The German utility model ("Gebrauchsmuster") system has been in place since 1891. It was introduced because it was perceived that patent law was unsuitable for all types of inventions. This derived from the stringent German patentability requirement that inventions represent a *technischer Fortschritt,* or "technical step forward in the art," a standard that was considered too elevated to be met by minor inventions.[43] Thus, the utility model system was introduced with a lower standard of inventiveness, a non-examination system, and a short period of protection. Conceptually, the German system was not a supplemental patent regime; rather the utility model protection was introduced as a supplement to 1876 legislation protecting copyrights and designs. The German utility model regime was a classic utility model regime i.e. one that is tied inextricably to design protection and to preventing third parties from duplicating the external

configurations of certain handtools and other everyday implements whose creative contribution fell chronically short of the inventive height that the mature patent paradigm required.[44]Thus, the classic utility model regime, as exemplified by German legislation, was originally conceived as a form of design protection.[45]

The utility model system was, and is still, considered to be an indicator and encouragement of local innovative activity in the fields of agricultural products and domestic appliances. Thus, historically, there has always been a "three-dimensional" requirement for utility model laws, as such a requirement related to the types of innovative activity to be encouraged. One could almost say that this was an early registered design system for functional designs. What the following analysis reveals is that the German local industry is very knowledgeable about the system and utilises it to its fullest extent.

2.2.3 Current Substantive Law

The German Utility Model Law, last amended on 21 January 2005, protects any inventions of technical character that are new, based on inventive step and are capable of industrial application.[46] In addition to the usual excluded subject matter under patent law (such as discoveries, scientific theories, aesthetic creations, etc)[47], the utility model law additionally excludes inventions relating to processes and biotechnological inventions. Furthermore, as opposed to German patent law, utility model law requires lesser thresholds of protection. The subject matter of a utility model is considered new if it

does not form part of the state of the art. The state of the art comprises any knowledge made available to the public by means of a written description or by use within the territory of Germany before the date relevant for the priority of the application (i.e. "local novelty"). Non-obviousness under utility model law is easier to meet than under patent law as the utility model law refers to "inventive *step",* while the patent act requires "inventive *activity",* which is a higher level of inventiveness.[48] The process of obtaining a utility model registration is made even simpler by the fact that there is no pre-grant examination.

The maximum duration of protection is ten years.[49]

2.2.4 Empirical Evidence

Because the utility model registration is issued speedily, inventors tend to file for patents and utility models simultaneously. The result is that nearly one German patent application in every two is accompanied by a utility model registration.[50]

The German utility models system continues to be a popular one. Figures on utility model applications filed at the German Patent and Trade Mark Office, which include PCT filings, show that applications increased steadily up to 1999. The numbers have fallen from their 1999 peak, but not by a great deal and the drop is insufficient to indicate that use of the system is declining. Admittedly, the total of utility models in force has fallen from 115,535 in 2000 to 108,175 in 2003, but given that the number of 2002 and 2003 applications are both greater than in 2001, this may be a short-term trend.

The fact that the Germany utility model system continues to be popular with industry despite Germany's being ranked by the European Commission as sixth most innovative economy in the world[51] suggests that the advantages of utility models are not confined to that of facilitating an economy's advancement from developing to developed country status. But it may not be quite as simple as that given that the poorer East Germany was incorporated into the Federal Republic of Germany in 1990. Moreover, if we compare Germany with Japan we find the two countries despite their similar economic circumstances and innovation climate diverged from the mid 1990s, with the German filing numbers remaining high while Japanese filings markedly declined.

However, it does appear that despite the popularity of utility models in Germany, SMEs are still reluctant to invest into R&D. It is argued that Germany's leading position in the world market for products is a result of its *Mittdstand,* a network of SMEs, including family firms; investment levels according to the report has been steadily dropping since 1998; so worrying is this trend that the German Government has started a seed fund to assist R&D-based start-ups.[52] Arguably, the utility model system in Germany may not really be serving one of its primary purpose which is to spur innovation through SMEs.

2.3 Utility model protection system justifications for utility model (China)

Utility model patent system constitutes an important part of Chinese patent system. The purpose of the system is to protect small inventions and creations, which play an unique role in China's patent protection system.

Though starting at a comparatively late stage, China's utility model patent system has experienced rapid developments. The system is in compliance with the basic principles of the international conventions and consists with the practices of most countries.

The utility model patent system has made remarkable achievements in China. It promotes not only the implementation of the patent system, but also the economic, scientific and technological development of the country. Meanwhile, it also gives effective protection to foreign patented technologies and interests of foreign enterprises in China.

China attaches great attention to the quality of utility model patents and active measures have been taken for that purpose,

2.3.1 China's Utility Model Patent System Is Kept Improving

China's utility model patent system was established at the time when Chinese patent system was founded and it constituted an important part of the whole system. Since the implementation of Chinese Patent Law on April 1, 1985, it stated clearly that China provided protection for 3 kinds of inventions and creations including inventions, utility models and designs. Along with the improvement of Chinese Patent Law, China's utility model patent system also kept improving.

China's utility model patent system gives protection for small inventions and creations which complement the invention patent. The duration of protection for utility model is 10 years with the same legal effect as invention patent. The right holders can prevent others from any commercial use of the inventions which are protected by utility model without permission.

2.3.2 The Establishment and Development of China's Utility Model Patent System

When the system was firstly established, China was comparatively weak in capacity for science and technology innovation. The inventions and creations made by many SMEs were technically low, and the majority of the innovative outputs were small inventions and creations. Though these small inventions and creations were not as creative as invention patents in technological sense, they also contributed to the scientific technology advancement, economic and society development of the country and should be given appropriate protection. China's utility model patent system was set up to protect this kind of inventions and creations.

In 1985, the Implementing Regulations of the Chinese Patent Law prescribed that "in patent law, 'utility model' means any new solutions relating to the shape, the structure, or the combination of a product, which is applicable for practical use," According to the Patent Law in 1985, the duration of utility model patent was 5 years and could be extended for 3 years.

The revised Patent Law of 1992 further strengthened the protection of utility model, and its protection duration was extended to 10 years. At the same time, the renewal procedure of patent right was abolished. After this revision, the protection duration of utility model patent was in consistence with that commonly adopted by most countries.

The revised Patent Law since 2000 added utility model search report system targeting at novelty, inventiveness and applicability of the utility model after granting. This revision had taken full consideration of related principles in TRIPs agreement and provided a judicial remedy for utility model patent applicants and parties involved in disputes of patent right confirmation.

The revised Patent Law since 2008 allowed the same applicant to apply for a utility model patent and an invention patent with the same invention creation. The scope of preliminary examination was appropriately expanded and quality of patented utility models was further enhanced. Utility model search report was replaced by patent right evaluation report and the evaluation scope was enlarged.

In order to regulate utility model patentee's utilization of his right, the revised Patent Law prescribed that the people's courts or the administrative authorities might request the utility model patentee, who filed patent infringement case before them, to submit patent right evaluation report made by SIPO.

The revised Patent Law also introduced prior art defense system to patent infringement litigations. If the party charged with infringement could prove that the related technology implemented by himself was a prior art before the filling date, the court or the administrative authority could decide directly that the charges were not supported.

2.3.4 Features of China's Utility Model Patent Examination

China's utility model patent examination goes through two stages: preliminary examination and preliminary examination with evaluation (search) report. In accordance with Chinese patent law, utility model patent application can be granted a patent right if there is no reason for rejection was found during preliminary examination.

Preliminary examination system lasted from April 1985 to June 2001. Examination for utility model patents during the period included formal defects examination and obvious substantive defects examination. Formal defects examination consists of the completeness of application documents, fee payment, applicant's qualification, bibliographic data, requirements for publication and etc. Obvious substantive defects examination consists of subject matter as patentable, novelty, inventiveness, unity, the claims clarity and conciseness/support from the description, the description's clarity and completeness and etc, so as to ensure the quality of utility model patents.

Preliminary examination is stricter than formal examination system.

Preliminary examination with evaluation (search) report system was carried out since July of 2001, and it is the system in use today. In addition to the formal defects examination and the obvious substantive defects examination of the preliminary examination system, the utility model patent right evaluation report system was set up. The report evaluates the stability of a utility model patent, compensates and perfects the preliminary examination system. Utility model patentees or stakeholders may request SIPO to make a utility model patent right evaluation report and give objective assessment to its stability. This can be used as an evidence of right stability when the people's court deals with patent infringement disputes.

2.3.5 China's Utility Model Patent System Is in Conformity with That of Most Countries

At present, there are 57 countries, regions or organizations implementing utility model system throughout the world. There is no specific international treaty for utility model except some general regulations in the Paris Convention. China's utility model patent system conforms to the principles like national treatment, independent protection and priority prescribed in the Paris Convention.

The fact of lacking a unified international treaty results in differences in protected subject matter, novelty, inventiveness and procedure for substantive examination among the countries with utility model system, China's utility model patent system though not

completely the same with that of other countries, its practices are basically in conformity with the rest of the world.

Subject matter as patentable in China is basically the same with most of the countries. Although countries (regions) give different names to utility model system, they share the objectives of protecting small inventions. Subject matter as patentable in most countries is limited to inventions in shape and structure of a product, device or apparatus, so as to define clearly the extent of protection for utility model and to facilitate infringement judgment and right utilization. China's utility model patent system provides the regulations on subject matter as patentable for the same purpose.

Like most countries, substantive examination is not carried out for utility model in China. Most of the countries adopt formal examination system instead of substantive examination for utility model. Substantive examination is only adopted in limited countries like Korea, Brazil and Poland. China implements preliminary examination system which contains obvious substantive defects examination plus formal defects examination and it is stricter than mere formal examination.

Patent right evaluation report system in China is in conformity with that in most countries. In most countries adopting formal examination to utility model, patentees or other stakeholders may request the patent authority to issue search report, documentation

report and etc. China also established the patent right evaluation report system as an important supplement to the preliminary examination system.

Inventiveness standard in China is in conformity with that in most countries. Most of them apply a lower inventiveness standard for utility model than invention patent, while some countries even do not have any specific inventiveness requirement. The inventiveness standard of the utility model in China is that "...as compared with the prior art, ...the utility model has substantive features and progress". Although it is lower than that of the invention patent, namely "...the invention has prominent substantive features and represents a notable progress.,.", it still belongs to the common practices taken by most countries in the world.

Avoiding repetitive patenting to utility model in China is in conformity with that in most countries. Invention patent right and utility model patent right are not allowed to be granted to the same invention in most countries. China's patent law clearly defines that "for any identical invention creation, only one patent right shall be granted".

China's novelty standard for utility model is comparatively higher than most countries.

Most of the countries adopt relative novelty standard for utility model while China applies absolute novelty standard which is the same as invention patent.

2.3.6. China's Utility Model Patent System Made Remarkable Achievements

China's utility model patent system not only gives incentives to the SMEs for creation but also promotes the implementation of the patent system in China. It facilitates the circulation of patented technology, contributes to economic development, science and technology progress. At the same time, it also gives effective protection to foreign patented technologies and interests of foreign enterprises in China, The present utility model patent system in China matches China's national development stage,

2.3.7 China's Utility Model Patent Applications Experienced Rapid Increase in Recent Years

In 1997, China's utility model patent applications surpassed 50,000, ranking No. 1 in the world for the first time. The utility model applications exceeded 200,000 in 2008, 300,000 in 2009, and 400,000 in 2010, In 2011, its applications reached 585,000, which was 42.9%increase over the previous year.

By 2000, China's applications for utility model patent accounted for 42% of the world's total. With the sharp growth of China's utility model applications, it accounted for 83% of the world's total by 2010.

In 2011, SIPO granted in total 408,000 utility model patents, which were 18.6% growth over the previous year. By the end of 2011, the valid utility model patents granted by SIPO were 1,121,000.

Despite of the rapid growth and the large quantity of China's utility model patent applications, the per capital number of utility model applications in China is not high. In

2011, China's utility model patent applications per 10,000 persons only reached 4.5, which was much lower than that of Germany, Japan and Korea's historical peak.

Germany's utility model patent applications were about 7 per 10,000 persons in the mid 1970s. Japan's utility model patent applications per 10,000 persons were nearly 17 in the mid 1980s. The figure for Korea was about 14 in the mid and late 1990s. It is estimated that in the near future, China's utility model patent applications will still keep a relatively high growth rate.

2.3.8 China's Utility Model Patents Enjoy Good Stability

According to statistics, the Patent Reexamination Board of SIPO received 10,044 requests for invalidation of utility model patents between 2010 and 2011, In the same time, the number of granted utility model patents was 1,667,000, The requests for invalidation of utility model patents only took 0.60% of the total granted utility model patents. Among 9,532 requests for invalidation of utility model patents closed from 2002 to 2011, complete invalidations and partial invalidations accounted for 35.60% and 11.80% respectively. The invalid utility model patents were only 0.27% of the total granted utility model patents in the same time period. This showed clearly that China's utility model patents have good quality and stability.

In the last ten years, the proportion of the requests for invalidation of utility model patents to the granted utility model patents showed obvious decrease. In 2002, the number of invalidation request for utility model patents was 756, accounting for 1.31%

of the year's granted utility model patents (57,484). In 2011, the number of invalidation requests for utility model patents was 1,323, accounting for only 0.32% of the year's granted utility model patents (408,110). The figure indicated that the quality of China's utility model patents was improving and China's utility model patent system was operating soundly.

2.3.9 China's Utility Model Patent System Effectively Protects Foreign Patented Technologies in China

In recent years, the amount of foreign applications for utility model patents in China is increasing rapidly. There were 4,164 utility model applications in 2011, which was 3.1 times of the year 2007. Those applications were from 58 countries and regions, and the top six countries were Japan, the United States, Germany, Korea, Switzerland and France, Among them, the applications from Japan and the United States made up nearly one-third and one-fourth of the total respectively. In 20l"l, the applications for utility model patents from Japan, the United States, Germany, Switzerland and France all experienced an obvious increase, which was 187%, 20.6%, 79.8%, 138,4% and 190.2% respectively comparing with the year 2010.

The top 10 applicants of foreign applications for utility model patents in 2011 in China were all big and famous multinational enterprises, which mainly came from the United States and Japan. In fact, those enterprises not only filed applications in their parent companies' name but also their subsidiaries, independent corporations and joint venture

companies. Among these companies, Apple's applications for utility model patents grew by 268% over the same period of last year.

2.3.10 China's Utility Model Patent System Gives Incentives to the SMEs Creation

China has a large number of SMEs, in which many researchers and even decision makers do not have much knowledge of the complicated patent system. The utility model examination in China adopts preliminary examination system which simplifies the examination procedures, shortens the examination period and reduces the application expenses, and thus introduces patent system to many SMEs.

Suzhou Touchstone International Medical Science Co., Ltd. is a high-tech company which emphasizes medical technology R&D, innovation and production. Its main products are mid and high end surgical operating instruments which are exported to various countries in Europe and North America. The company owns 297 utility model patents. Its most representative utility model patent'—"surgical binding instrument rotary cutter head" completely changed the traditional design of stapler. It eased the strict requirements for materials and manufacture, reduced operation costs and improved the reliability and success rate of surgery.

Suzhou Haixln Mechanical & Electrical Equipment Co., Ltd. has been devoted to researching and producing antistatic products. The company insists in technology innovation and focuses on indigenous IP development and protection. The company now

owns over 50 utility model patents. After nine years' efforts, it gradually forms a large-scale production base for anti-static equipments and provides high quality services to the world at affordable prices through internet. It is the designated supplier of some famous companies such as KONICA MINOLTA, SONY, and NIKON.

China has a lot of technology-oriented SMEs like Suzhou Touchstone and Haixin who protect their technological innovations and strengthen their market competitiveness effectively by utility model patents. Utility model patents provide powerful protection for a company's innovation during its starting -up stage and paves the way for company's future development.

2.3.11 China's Utility Model Patent System Greatly Promotes Patented Technology Transfer

Comparing with invention patent utility model patent is relatively simple and easier to implement. The cost of buying a utility model patent or obtaining its exclusive right or sole license for exploitation is cheap and more acceptable for SMEs. Moreover, utility model examination period is shorter and thus get right granted faster. This implies that it can make the technology be known to the public and ushers it into the technology trade channel within the shortest time.

According to investigations, by the end of 2011, the valid utility model patents that maintained for more than 3 years account for 52.8% of the total, among which 12.9%maintained for over 6 years. From 2006 to 2010, the implementation rate of utility

model patent was above 60%. Among the implemented utility model patents, the percentage of self-implementation by the patentees was over 90%. The long maintenance period and the relative high rate of implementation indicate that utility model patents not only contain comparatively high technology but also play an important role in promoting economic prosperity.

Most of China's utility model patents have been utilized in real manufacturing and the implementation rate of utility model patents is higher than that of invention patents (less than 60%).

2.3.12 The Utility Model Patent System Matches China's Current Development

The utility model patent system has made remarkable achievements in China because China introduced advanced foreign experiences based on its practical situation. The history of IP systems development in the world proves that IP system can only promote science and technology innovation and economic growth when it matches a country's development level and continuously adapts to the future development.

Since the introduction of reform and opening up policy, China has made great economic developments, and significantly enhanced its innovative capability in science and technology. At present, China is committed to establish an innovative country and promote the transformation from factor-driving to innovation-driving. It regards enhancing indigenous innovation capacity as the core issue for changing economy

development mode and adjusting economic structure, so as to steadily improve China's innovative capability in science and technology.

However, as a developing country, China is still low in general innovative capacity. It is a learning country of big gap with the developed countries. The present innovative activities in China are mainly surrounding innovation, simple technology improvements and re-innovations. Most indigenous technologies are the results of improvements or transplants of the existing technologies or related technologies. The market life of those technologies is often short and their technology level is relatively low. Therefore, the utility model patent system is still one of the important IP systems to encourage invention-creations and promote economic developments in China.

Applying for utility model patents has become an important means of SMEs in implementing IP strategy and promoting indigenous innovations. More and more SMEs in China are taking utility model patent application as an important approach to own their indigenous IP rights. Utility model patents are becoming their important intangible assets and a useful tool for SMEs to participate in market competition.

2.3.13 China is Making Efforts to Improve the Quality of Utility Model Patents

China has been attaching great importance to the quality of utility model patents. The revised patent law further raised the standard of granting utility model patents, providing the legal support for improving its quality.

In recent years, SIPO has also taken effective measures to constantly improve the examination quality management system and the quality of utility model patents while adhering to the principle of examination in accordance with the law.

Establish and complete an office department division three level examination quality management system to further strengthen internal management such as target management and process control. The office adopts effective measures to ensure the consistency of utility model patent examination standard.

Reinforce the momentum to crack down the abnormal patent applications as plagiarism of prior art and repetitive applications, and strengthen the examination for those low-quality utility model patent applications which are obviously lack of novelty or belong to repetitive patenting.

Carry out endorsement system by division director (director general) of the examination department. The notifications regarding obvious substantive defects of utility model patent applications have to be reviewed and issued by division director (director general).

Set up external patent examination quality feedback system, collecting opinions through website, hotline, emails and letters, and accepting public supervision and complaints relating to patents examination work including utility model patent examination.

2.4 Small And Medium-Sized Enterprises And Intellectual Property Rights

2.4.1 Intellectual property right and SMTs

In the OECD countries, SMEs account for 95% of companies and 60 to 70 % of employment. Given the significant role of SMEs in the national economy in terms of their sizeable contribution to GDP, employment generation, export performance, and achieving sustainable national economic development, all national governments in the OECD consciously seek to facilitate the creation and development of the national SMEs sector. Over the past two decades, government policies have consistently sought to encourage innovation among SMEs, on the understanding that the development of a vibrant and dynamic SMEs sector, requires constant creativity and innovation to adapt to fast-changing market conditions, short product cycles and intense market competition.

SMEs, however, are an extremely heterogeneous group. Their innovative capacity and ability to develop new and innovative products, processes and services varies significantly, depending on their sector, size, focus, resources and the business environment in which they operate. In certain high-technology sectors, such as semiconductors and biotechnology, innovative SMEs have been a key to the growth and dynamism of these sectors. In such sectors, patenting activity is comparatively much higher than in other sectors and small firms rely heavily on patents to signal expertise, either to attract research partners or investment (Mazzoleni and Nelson (1998). Patenting is generally considered particularly important in "discrete product industries" (e.g.

pharmaceutical or chemical industry) as compared to other manufacturing industries where it may be more difficult to appropriate R&D results through patenting.[5]

For new technology-based firms (or NTBFs), reliance on IP rights for a competitive edge is increasingly important. NTBFs are new firms established for the purpose of commercializing new technology or providing an innovative service on the basis of new technology. Such enterprises generally have limited capital and tangible assets and largely depend on intangible assets to succeed in the marketplace. The innovative idea is usually the main asset of the company during its start-up phase and the basis on which it will seek investors to take the product or service to market. For technology-based entrepreneurs and start-ups it is critical to find ways of appropriating their innovative ideas, products and processes in order to survive in the marketplace, obtain a competitive edge and have a credible business plan to present to investors.

In a number of other sectors, however, innovation by SMEs mainly consists in minor adaptations to existing products, innovation in designs, mode of service delivery or management and marketing practices. In many such sectors, SME innovations are mainly of an informal nature, without formal R&D investments, R&D laboratories or R&D personnel. In such cases, other intellectual property rights, such as utility models, industrial designs and trademarks may play a bigger role than patents in providing a competitive edge to SMEs. IP rights such as trademarks and industrial designs may provide companies with the ability to differentiate their products, segment markets,

create a brand image, find niche markets, target specific customer groups and obtain exclusivity over the commercial use of a mark or design that may be the main selling point of a new or improved product or service.

The rise of the information and telecommunications industries and the increasing importance of the services sector in the economy of OECD countries have also enhanced the importance of the copyright system as a tool for protecting the creative efforts of companies in, for example, the software and multi-media sectors, as well as in many other sectors which rely on creative work protectable by copyright. The traditional focus of the copyright system on artists, musicians and writers, has increasingly expanded in the current economic context to include computer programmers and other new categories of creators in the entertainment, software or teaching industries, to name a few. The entry into force of the WIPO "Internet Treaties", the Digital Millennium Copyright Act in the US and similar legislation in other OECD countries are increasingly providing a legal framework for the exchange of copyright-protected products and information on the Internet. For the vast number of SMEs operating in such industries, royalty revenues from the licensing of their copyrighted works is generally the main or only source of income. The existence of a well-functioning copyright and related rights system is often crucial for their survival.

Aside from providing the exclusive right to prevent others from commercially using an invention, design, trademark or literary or artistic work, IP rights are often used by companies to meet a wide range of additional business objectives. Depending on the IP

strategy of each company, IP rights may be used to: obtain access to new markets (e.g. by licensing another company to manufacture a new or improved product based on a patented invention and/or protected trade secrets); enhance the reputation of a company as a technology leader through access to, or ownership of, key patented technologies; creating a corporate identity through a trademark and branding strategy; segmenting markets through different designs targeted to different customer groups; increase the bargaining power of the enterprise vis-a-vis business partners or investors; avoiding wasteful investments in R&D by consulting patent databases and learning about recent technological developments; establishing strategic alliances, joint ventures or other types of partnerships with other companies with complementary assets; setting up a franchising system on the basis of the company's trademark and other IP rights; increase the market value of the company in the case of a merger or acquisition; obtain additional revenues through licensing or sale of IP rights; provide access to new financing opportunities (such as through securitization of IP assets) or support a request for funds from a financial institution, bank, business angel or venture capitalist.

The list is by no means exhaustive. The strategic use of IP rights by enterprises, including SMEs, will depend on the company's overall business strategy. Effective management of IP rights may provide new business opportunities for companies with the appropriate skills, innovative capacity and resources to benefit from the range of options offered by the IP system.

SMEs are often constrained in many more ways than larger enterprises in making an effective and efficient use of the IP system. The heterogeneity of SMEs in terms of their ability to innovate and to use existing technology is also reflected in the ways that such enterprises use the IP system; it varies widely from company to company, sector to sector, country to country, and over time. The crucial point to note is that SMEs of varying sizes and levels of technological sophistication may benefit from different aspects of the intellectual property system according to their specific needs and technological capacity. In the knowledge-based economy, it is their ability to use the IP system efficiently and effectively which will largely influence their capacity to make the most of their creative and innovative capacity and recoup their investments in innovation. The important question is, therefore, the extent to which SMEs are currently aware of, have access to and are making an effective and efficient use of the IP system and, if not, what are the barriers that are preventing them from doing so.

2.4.2 BARRIERS FACED BY SMEs IN USING THE IP SYSTEM

Studies from various OECD countries reveal that SMEs face a number of difficulties in using the IP system. This is often the result of their limited knowledge of the ins and outs of the IP system, lack of clarity about its relevance to their business strategy and competitiveness, and of their finding the system too complex and expensive to use. Available studies/research on the use of the IP system by SMEs are largely limited to the use of patents. This empirical evidence paints a picture in which the propensity to apply for patents is highly related to the size of the company. This is the case even when

focusing exclusively on innovative companies. The evidence is somewhat similar, though to a lesser degree, for trademarks (WIPO, 2003).

In a survey done by the Roland Berger Forschungs Institut for the European Patent Office (EPO) on the use of the patent system by the production industries (excluding micro-enterprises and enterprises in the handicraft sector), it was reported that one out of every three companies engage in R&D activities and may be considered potential patent applicants, but only one in six actually do apply for patents (EPO, 1994). According to the survey, SMEs that do not apply for patents stated that the main reasons for not doing so are the costs and time needed for filing applications, while some SMEs also mentioned the ineffectiveness of the patent system. The survey also concluded that there is a major information deficit among SMEs on the patent system, which leads to a low level of filing of patent applications by potential applicants, and a lack of active government support to assist SMEs in the patenting process given the large number of barriers faced.

The costs of patenting are generally perceived as one of the greatest barriers for SMEs[6]. In budgeting the costs relating to the acquisition of IP rights, companies need to take into consideration not only the official fees (including application fees, publication fees and maintenance fees) but also the costs relating to application preparation and prosecution, legal advice and translation costs whenever the applicant intends to apply for protection abroad. Overall, the costs of protection may be perceived by many SMEs

as exceeding the potential benefits to be obtained from protection, particularly considering that a significant part of the costs may be incurred before the product has reached the market and that lenders, investors or government programs rarely provide financial support for the protection of IP rights.

Nevertheless, evidence gathered by some national IP offices (e.g. the Danish Patent and Trademark Office) suggests that a reduction of fees for SMEs would not necessarily lead to an increase in the number of patent applications from that sector. It may be that the other costs related to patent protection, other than the official filing and processing fees may be more of an obstacle, or that the perception of high costs, complexity or ineffectiveness of the patent system, especially in terms of enforcement of patent rights, may be more of a limiting factor than the actual costs involved. However, it may also be that the reasons for low use of the patent system by SMEs may be totally unrelated to costs of filing but relate, for example, to business strategy, to a limited knowledge of the IP system or to limited access to expert advice on the subject matter. More research on these issues is required.

Aside from the costs, there are a number of additional elements of the application process that may act as a disincentive for SMEs to seek IP protection, including the time required to be granted a patent or to obtain a trademark registration. The increasing number of applications at some of the large IP offices have often led to an increase in the backlog and therefore an increase in the time required from filing to grant of a patent or

registration of a trademark. For SMEs, a long delay for obtaining a patent leaves a great degree of uncertainty and delays the possibility of finding potential licensees or partners for exploiting an invention.

In a recently published WIPO study on the use of the IP system by SMEs in Norway, attention is drawn to the fact that small companies not only apply for patents less often than large enterprises but also that when they do apply their success rate (in terms of being granted the patent) is significantly lower. This suggests that SMEs that invest in protecting their inventions are often not effective in obtaining patents. Reasons for this may be many, ranging from insufficient information on the prior art, poorly drafted patent applications, limited access to adequate legal advice and lack of resources (human and financial) to follow the application through to the grant stage (WIPO, 2003). It is to be expected that failure to obtain a patent or, after grant of patent rights, failure to successfully exploit the granted patent, may also discourage SMEs in applying for patent protection in the future.

In terms of IP protection in foreign markets, a recent report by the General Accounting Office (GAO) of the US identified high costs, limited resources, and limited knowledge among small businesses about foreign patent laws and systems as some of the greatest obstacles faced by American small businesses in applying for patents abroad (GAO, 2003). The GAO report expressed a concern that small businesses, particularly high technology firms, were losing potential sales in foreign markets by not applying for

patent protection abroad. Empirical data suggests that small firms file for less patents abroad than do large firms (e.g. Mogee 2000). In this respect, the importance of the global protection systems administered by WIPO (i.e. the Patent Cooperation Treaty for inventions, the Madrid system for trademarks and the Hague system for industrial designs) and of the regional protection systems must be highlighted as they significantly facilitate procedures and reduce costs for applying for IP protection in several countries.

Given some of the barriers faced in using the patent system, SMEs often use alternative means of appropriating their innovations. Some of the alternatives to patenting include secrecy, exploitation of lead-time advantages, moving rapidly down the learning curve, use of complementary sales and service capabilities, technical complexity, on-going innovation, relationships based on trust and use of trademarks to differentiate their products from those of imitators. It is often noted that secrecy and lead-time advantages may be the most common way of appropriating innovations among firms, particularly (though not exclusively) among SMEs. One of the main reasons for this is that a large variety of innovations may lack the inventive step to be protectable under the patent system (in such cases utility models, where such protection is available, or industrial designs may be suitable alternatives) or because process innovations or innovations in certain low-technology sectors are less likely to be patented. In addition, the costs related to patent protection will act as a disincentive to patenting whenever firms do not expect to obtain sufficient benefits to cover the expenditure related to patent protection (e.g. when the commercial potential is limited).

With respect to the use of secrecy as a means, to appropriate innovation, companies may rely on legislation on trade secrets and/or unfair competition for the protection of their confidential business information. Trade secrets are intellectual property rights recognized as such by international agreements such as the WTO/ TRIPS Agreement. However, very little is known on how SMEs protect their trade secrets and to what extent they are aware of the protection offered by specific national laws on trade secrets and/or laws on unfair competition that also deal with protection of trade secrets. There is a general perception that SMEs often use trade secret protection by default, i.e. as a way of avoiding the expenditure and administrative procedures involved in patent protection, without taking adequate measures that need to be in place in order to ensure that confidential information is considered a legally protectable trade secret. According to most national IP laws, for a trade secret to be protected, there is a need to prove that (1) the information is secret (i.e., it is not generally known among, or readily accessible to, circles that normally deal with the kind of information in question), (2) it has commercial value because it is secret, and (3) the rightful holder of the information has taken all possible reasonable steps under the circumstances to keep it secret or confidential (e.g., through confidentiality agreements, non-disclosure agreements, etc.).

An additional element that must be taken into account when analyzing barriers to use of the IP system by SMEs is the issue of enforcement of IP rights. The difficulties that companies may face in monitoring the use of their IP rights in the marketplace and in enforcing them may act as additional disincentives to applying for protection in the first

place (see Cordes 1999 and Koen 1992). In a recent survey of patenting companies in the European Union, it was argued that in 49% of sampled firms, fear of the costs of patent-defense litigation had an impact on investments in generating inventions (European Commission, 2000 a). In the US, the enforcement of IP rights is more of a problem for small enterprises than for large firms; while patents owned by small firms are infringed more often than those owned by large firms, the small firms are much less likely to litigate (Koen, 1992).

An area that has not been fully explored, is the extent to which SMEs use titles of protection other than patents. Raw statistics on applications for utility models and industrial designs have shown that, with some exceptions, SMEs have generally made limited use of these two forms of protection, despite them being considered titles of protection that would appear to be most suited to SMEs. For example, it appears that SMEs, in most countries where designs may be protected by copyright and as registered design rights, rely more often on copyright as a means of protection, as it does not require registration as a condition for protection. Again, it would be appropriate to inquire whether reliance on copyright is the result of conscious business strategy (in which case, appropriate measures to keep necessary evidence to prove ownership would be required) or whether reliance on copyright is by default as a result of limited knowledge of the existence of industrial design protection or as a way to avoid the costs involved in industrial design registration.

Not only is the propensity to apply for the protection of IP rights among SMEs low, but so is the use of the information contained in patent databases. Various studies have shown that the use of patent information as a source of technological information rises with firm size (Arundel and Steinmuller, 1998). The Community Innovation Survey shows that 34% of large R&D performing firms find patent information important, while only 18% of R&D performing SMEs and 5.9% of non-R&D performing SMEs do so. For most enterprises, trade fairs, information from suppliers and specialized magazines remain preferred sources of information. This is so because of their lack of awareness of the wealth of information available in patent documents, limited skills to conduct patent searches, lack of familiarity with patent jargon and inability to interpret the "claims" in patent documents. Basic training in this area would enable entrepreneurs, researchers and engineers in SMEs to benefit from the public disclosure function of patents.

For NTBFs, as for most SMEs, funds remain the most scarce and valued resource. NTBFs reliance on intangible assets complicates the process of obtaining loans from financial institutions including commercial banks and venture capitalists. Protection of intangible assets as IP rights slightly improves the situation, particularly when dealing with venture capitalists and business angels, though less so with commercial banks. According to a study commissioned by the European Commission the difficulty involved in valuation of intellectual property assets is an important reason as to why such assets cannot be used effectively as collateral (European Commission, 2001). The survey pointed out that none of the surveyed European commercial banks accepts intangible assets such as intellectual property, as security for a loan. "This is not to say

that intellectual property is not recognized - concluded the study -; as part of the overall assessment the banks insist that it be properly protected." In some countries, where venture capital markets are well developed, patents are crucial and often indispensable to have access to any funding for NTBFs. Developing reliable mechanisms to put a value on intellectual property rights and the further development of markets for IP assets would help in creating a more NTBF-friendly environment with easier access to funding on the basis of the IP rights.

The barriers to a wider and more effective use of the IP system by SMEs are, therefore, many. In the first place, low awareness of the system limits the exposure SMEs have to the IP system and their ability to use all the elements offered by the IP system effectively, including not just patents but also utility models, trademarks, industrial designs, trade secrets, patent databases, copyright and other IP rights. Poor IP management skills within SMEs reduce their ability to fully benefit from the system and, therefore, discourage its future use. Secondly, limited access to the necessary human resources and/or accessible legal advice make use of the IP system complicated and decreases the chances of success in the application process for registration/grant of IP rights. Efficient IP management requires an array of skills ranging from the legal to the scientific/technical and the commercial that not all SMEs have in-house. In fact, such expertise is generally lacking in many if not most SME support institutions; this is equally true of SME consultants and business advisors in the private sector. Thirdly, high costs, not just for acquiring and maintaining but also for monitoring and enforcing

IP rights are an additional barrier, particularly for firms that are operating in a number of geographically dispersed markets.

2.4.3 Government Measures For Encouraging A More Effective Use Of The IP System By SMES

In most countries, including those in the OECD, the national Intellectual Property Offices (IPOs) have been historically perceived as being responsible for the IP system at the national level. The IP system was traditionally detached from innovation policy, SME policy, entrepreneurship policy, or science and technology policy. It was generally seen as a separate legal sphere of little direct relevance to the broader innovation promotion or competitiveness strategy of a country. As such, TP offices dealt almost exclusively with the registration and grant of IP rights and were generally not involved in debates on how to stimulate innovation, notably among entrepreneurs and SMEs.

In recent years, the increasing importance of IP rights in a knowledge-based economy has begun to change the way national, regional and local governments view intellectual property rights and the IP system as a whole. In many countries, there has been a shift in the focus of national IPOs. While the traditional functions of IPOs in the area of examination, registration and grant of IP rights (mostly limited to patents, trademarks and industrial designs) still remains the central element of their day-to-day work, IPOs are increasingly devoting resources to a range of additional services aimed at facilitating the access to, and reaping the benefit from, the IP system by various users of the IP system, including researchers, entrepreneurs and SMEs.

The information gathered by the SMEs Division of WIPO on the basis of a survey of IP offices and SME support institutions shows that activities for facilitating a wider and more effective use of the IP system by SMEs generally fall into five main categories:

(a) Awareness-raising and training on IP

(b) Technological information services

(c) Financial assistance

(d) Customized advisory services on IP

(e) Assistance for IP exploitation and technology transfer

The bulk of activities specifically targeted at the SME sector have focused on awareness-raising and advice on procedural matters concerning the application for IP rights. These activities take into account that low awareness and limited knowledge of the IP system by SMEs is perceived in many countries to be one of the main challenges that needs to be addressed.

The range of awareness-raising and training activities in which IP offices have been active include the following:

- Organization of seminars, conferences and campaigns on IP for entrepreneurs and SMEs; IP guides and other information material on various aspects of IP for entrepreneurs and SMEs;
- Web sites with practical information on IP issues for entrepreneurs and SMEs;
- Collection and dissemination of case studies illustrating the success stories of SMEs in leveraging IP assets;

- Building IP content into customized training manuals for entrepreneurs and enterprises operating in specific sectors (e.g. biotechnology, software, agriculture, multimedia, etc.); general advice to applicants on administrative issues relating to the application process (e.g. helpdesks within IP offices);
- Multimedia products with information and advice on management of IP assets;
- IPO participation in business fairs;
- Contribution of articles on IP issues to business magazines targeting entrepreneurs, researchers and SMEs;
- Regular radio and/or television programs on issues relating to intellectual property and innovation

2.5 Indigenous Industries and Nigerian Economy

For both developing and developed countries, indigenous industries play important roles in the process of industrialization and economic growth. Indigenous industries create employment opportunities, enhanced regional economic balance through industrial dispersal and generally promote effective resource utilization considered critical to economic development and growth.

Indigenous industries are categorized under small scale industry which requires limited capital outlay to commence business. It also has a simple management structure resulting from the fusion of ownership and management by one person or very few individuals as well as revolves around the owner-manager, rather than as a separate

corporate entity. Informal employer-employee relationship is one of the characteristic features of this all important industries. As a matter of fact these industries create employment opportunities for rural dwellers and mitigate rural-urban migration and resources utilization. It also serves dispersed local markets and produced goods with low scale economy for riche markets, and is widely dispersed throughout the country because of accessibility to raw materials.

Finally, it fosters development and the promotion of self-reliance through the utilization of local talent.

2.5.1 Types of indigenous industries in Nigeria

Small and medium size industries have been widely acknowledged as the springboard for sustainable economic development. Most of these indigenous industries are rural based and are capable of transforming the economy of the third world countries and making them very vibrant if adequate attention is paid to this informal sector by the policy makers. Some of the indigenous industries listed below are on the verge of extinction:

(a) Traditional Soap making industry

(b) Blacksmithing

(c) Fishing industry

(d) Wood carving

(e) Traditional Medicine

(f) Weaving/Dying

(g) Wood/Calabash carving

(h) Small scale farming

(i) Brewing/Distilling industry

(j) Glass and Bead

(k) Pottery

These industries could be empowered to turn around the lives of rural people. The rural people are among the poorest of the poor in the world, but there is lack of adequate data to address the issue. One of the major reasons for high rate of employment and rural poverty is the neglect of these indigenous industries by the policy makers. It is generally believe that agriculture is the only viable and suitable industry for the rural people because an average rural dweller engages in subsistence farming. The local farmers are still depending largely on archaic farming implements such as hoes, knives and sticks etc. The corollary to this is that, it is not everyone who wants to go into farming that has access to land and capital. Therefore the only way to create job opportunities in the rural areas is by empowering the indigenous industries.

2.5.2 Problems associated with indigenous Industries

The pivotal roles of indigenous industries notwithstanding, there are certain factors militating against their development and continuous survival in Nigeria. Such factors are:

(a) Limited access to financial capital

(b) Dominated by import dependent processes and factors

(c) Subjectivity in decision taking and prevalence of largely informal employer-employee relationship.

(d) Inaccessible rural roads

(e) Lack of encouragement by the government through various policies on rural development.

(f) Continuous emphasis "on the importation of foreign goods and services

2.6 Conclusion

In the past over 20 years, the utility model patent system has been developed and improved continuously and remarkable achievements have been made. However, the history of the system is short and there is still room for further improvement.

For a long period in the future, continuing to implement the utility model patent system will be a practical choice of China based on its national situation. We believe that the utility model patent system in China will keep improving with the development of the country's economic and social developments and its enhancement of innovative capacity. China will, as always, strengthen the examination for utility model and enhance the quality of related patents in accordance with the law. In the meantime, China will earnestly perform its obligations according to international IP treaties and conventions, strengthen IP international cooperation and contribute to a more balanced and efficient development of utility model patent system globally

CHAPTER 3

Methodology

3.0 Research Methodology

3.1 Introduction

Research methodology is a systematic way to solve a problem. It is a science of studying how research is to be carried out. Essentially, the procedures by which researchers go about their works of describing, explain and predicting it is also define as the study of methods by which knowledge is gained. It is aim is to give the work plan of research.

3.2 Study Design

This refers to the overall strategy that I choose to integrate the different components of the study in a coherent and logical way, thereby ensuring I will effectively address the research problem. It also constitute the plan for the collection of data (Primary and Secondary data), statistical analysis (quantitative data analysis).

Also my research problem determines the types of design I will use and not the other way round.

3.3 Study Population

The study will be conducted within two commercial cities in Nigeria namely Lagos and Aba. The rationale behind the choise of these two cities was based on the assumption that majority of SMEs owners lived and conducted their business activities in those two cities.

3.4 Data Collection Instruments

The data collection instruments that will be used for this research are visits and personal interviews with companies, IP firms and intellectual property office.

Also dispatching of questioner to companies, IP firms and intellectual property office in Nigeria.

3.5 Sampling Techniques

The study will focus on primary and secondary sources.

Secondary sources will include library and publication on Utility model

Interview will be carried out with the selected stakeholders in SMEs in Nigeria.

3.6 Data Collection Procedure

I will make use of both close-ended and open-ended questioner for the literate. Also I am going to use interviews guide to target population that are not literate.

3.7 Ethical Consideration

I will make sure I maintained the confidentiality of information and the information of the respondent will not be outside the research study the information will not get to third party. Also I will preserve the identity of the respondent (Right to privacy) .1 will avoid the use of deceptions.

3.8 Data Analysis.

Data analysis is a process of inspecting, cleaning, transforming and modeling data with the goal of discovering useful information, suggesting conclusions and supporting decision making.

I will be making use of quantitative data analysis for the purpose of this research study.

3.9 Limitation.

Some of the limitations I may encounter during my research study includes access to information, availability of enough resources both financial and human resources.

Chapter 4

4.0 Results And Discussion

This chapter deals with the analysis of the data collected and discussion of the findings of the study.

The main focus is to know the contribution of utility model system as a tool for economic and technological development in Nigeria.

4.1 Personal Characteristics Of Respondent

Table 1 (a) shows that 72% of the respondent were males while 28% were females. This shows that majority of the respondents were males with few females. The reason for few females may be as a result of the females engage in trading activities.

Table 1: Distribution of the Respondents According to Their Gender State.

Gender	Frequency	Percentage
Male	72	72.00
Female	28	28.00
Total	**100**	**100.00**

Table 2 represents the age distribution of the respondents and it shows that majority (60%) of the respondent were between the range of 45 – 65 years. This shows that high percentage of the adults involve in small and medium enterprises in Nigeria, because it

does not involve any formal education to start up, some inherit it from their parent or learn it from their master.

Also the table shows that 40% of the respondents are between the ranges of 20-35. This shows that able bodied youth, who can not involve in small and medium enterprise.

Table 2: Distribution of the Respondent According to their Age.

Age	Frequency	Percentage
20 – 35	40	40.00
45 – 65	60	60.00
Total	**100**	**100.00**

4.2 Marital Status

Table 3 shows that majority (75%) of the respondent were married and 14% were single. While 8% were widowed and 3% divorced

Table 3: Distribution of the Respondent According to Their Marital Status

Marital Status	Frequency	Percentage
Single	14	14.00
Married	75	75.00
Divorced	03	03.00
Widowed	08	08.00
Total	**100**	**100.00**

4.3 Educational Status

Table 4: distribution of respondents according to educational status (n = 100) from table 4. One could see that majority 50% of the respondents had no formal education. Also 10% had primary education while 14% read up to standard 3. And 5% completed secondary school and also 2% completed post secondary education. The low level of education of the respondents is as a result of the orientation they had from childhood that if they go to school they cannot get in the country, is better they learn hand work. Te respondents that had both secondary and post secondary education were found in the SMEs, when they cannot get office work.

Table 4: Distribution of the Respondents According to their Education Status.

Educational Level	Frequency	Percentage
No Education	50	50.00
Standard	14	14.00
Primary School	19	19.00
Secondary School	5	5.00
Pos Secondary	2	2.00
Total	**100**	**100.00**

4.4 Occupation

Table 5 shows the various occupations of the respondents. Cosmetic productions (soap, cream) sculpture and weaving, fabric productions, cobblers, weldering and blacksmithing, herbal medicines, production.

Table 5: Distribution of Respondent According to their Various Occupation

Occupation	Frequency	Percentage
Cosmetic Production (Soap, Cream)	15	15.00
Sculpture and Weaving	5	5.00
Fabric Productions	20	20.00
Cobblers	10	10.00
Welderning and Blacksmithing	10	10.00
Insecticide Production	5	5.00
Herbal Medicine	35	35.00
Total	**100**	**100.00**

Table 6: Distribution of the Respondents According to their Number of Employee

Number of employee	Frequency	Percentage
1 – 4	3	3.00
5 - 9	5	5.00
10 -19	12	12.00
20 – 50	80	8.00
Total	**100**	**100.00**

Table 7: Distribution of the Respondents According to Their Annual Turn Over

Annual Turnover	Frequency	Percentage
100,000 – 500,000	60	60.00
1000,000 – 2000,000	30	30.00
5000,000 – above	10	10.00
Total	**100**	**100.00**

Table 8: Distribution of the Respondents According to Number Intellectual Property they have

Yes	75	95.00
No	5	5.00
Total	**100**	**100.00**

Table 9: Distribution of the Respondents According to Their IP, Right Knowledge

I.P Right Knowledge	Frequency	Percentage
Yes	10	10.00
No	90	90.00
Total	**100**	**100.000**

Table 10: Distribution of the Respondents According to their Knowledge of Utility Model

Yes	0	0
No	100	100.00
Total	**100**	**100.00**

Table 11: Distribution of Respondents on How They Appreciate Intellection Property Protection System in Nigeria.

Yes	5	5.00
No	95	95.00
Total	**100**	**100.00**

Table 12: Distribution of the Respondents on the Barriors Facing SMEs to get Their Intellectual Property Protected in Nigeria Powerful.

Barriors		
No Momence Cost	95 5	95.00 5.00
Total	**100**	**100.00**

Table 13:Distribution of Respondents on what They Think Government Should do to Enable SMts More Users of UM System.

What govt. should do	Frequency	Percentage
Create awareness	90	90.00
Make it cheapu	10	10.00
Total	**100**	**100.00**

CHAPTER 5

5.0 Summary Conclusion And Recommendations

The study examined the importance of utility model as a tool for economic and technological development in Africa, which Nigeria was used as a study case.

Data were collected the sampled respondents through a structured interried schedule one hundred respondents vsurcy frequency cow, Percentage cumulative percentage.

The specific objectives of the study are as follows.

1. To assess whether utility model is another good and valuable tool for the economic as well as technological development of Nigeria.
2. To assess whether utility model would be more suitable to small innovators and Nigeria SME.
3. To assess whether utility model provides alternation system for the promotion and protection o IP in Nigeria.
4. To suggest recommendation on ways to improve utility model protection system in Nigeria.

5.1 Conclusion

The "knowledge economy" has brought about structural changes to the economies of African countries making it indispensable for companies and policy-makers to address

new challenges. One of the most crucial challenges faced by firms is how to manage their existing and new knowledge effectively in order to benefit fully from the innovative and creative capacity of the firm. Intellectual property rights have emerged as useful tools for managing innovation and resolving some of the "market failures" affecting innovating firms. It is, therefore, increasingly important for entrepreneurs, inventors, researchers, SMEs and business consultants to have a good understanding of the IP system in order to manage effectively a firm's intellectual assets.

In the current context, new technology-based firms are not only more numerous than in the past (especially in high-tech areas such as nanotechnology, biotechnology, software, and new materials) but also play an increasingly important role as innovation agents. Evidence from a number of African countries shows that SMEs, including NTBFs, are not always able to use the IP system effectively and often face a number of obstacles including limited knowledge of the system, high costs and lack of adequate legal, business and technical support for developing a successful IP strategy as part of their business strategy.

Efforts to redress the situation have sought to address some of the specific challenges currently faced by entrepreneurs and SMEs. A number of experiences have brought about interesting results and should be studied in greater detail to understand the extent to which they may be replicated elsewhere. However, it is argued here that a more concerted effort is required from all institutions operating in the national innovation

system to ensure that IP is adequately incorporated into the broader framework of support for entrepreneurs and SMEs. In doing so, institutions should take into consideration the main obstacles faced by entrepreneurs and SMEs not just in seeking grant/registration of IP rights but throughout the IP management cycle, including the commercial exploitation of IP rights, the use of patent databases, the valuation of IP assets and the enforcement of IP rights.

5.3 Recommendation

Taking into consideration the above analysis, it is recommended that the following actions be undertaken:

- Strengthen interaction between IP offices, SME support institutions, business associations, national, regional and local governments and other relevant institutions with a view to better identifying the IP needs of entrepreneurs and SMEs and the barriers to a more effective use of the IP system by entrepreneurs and SMEs, and implement activities to assist entrepreneurs and SMEs to overcome such barriers;
- Support efforts for further integration of IP issues in programs and policy initiatives aiming at fostering the development of entrepreneurship and SMEs, including policies directed to promoting the technological and innovative capacities of SMEs as well as policies on export promotion, entrepreneurship, science and technology, cultural development, e-commerce, technology transfer, sector-specific development and other relevant areas of policy-making;

- Promote a more effective use of the IP system by entrepreneurs and SMEs by enhancing awareness and knowledge of all elements of the IP system, including not just patents but also trademarks, geographical indications, industrial designs, utility models, trade secrets, copyright and related rights, new varieties of plants, non-original databases and relevant aspects of unfair competition law, among entrepreneurs and business advisers within public and private SME support institutions;
- Support initiatives that seek to facilitate the application process and reduce transaction costs for inventors, researchers, entrepreneurs and SMEs for using the IP system and study the impact of the introduction of procedures for accelerated grant of IP rights and of lower or discounted application fees for inventors, researchers, entrepreneurs and SMEs;
- Evaluate the current use - and potential impact of a wider use - of utility models and consider their more active promotion or their introduction, as the case may be;
- Study the impact of the introduction of IP rights for unregistered design rights;
- Enhance focus on IP in the teaching and training institutions for entrepreneurs, engineers, scientists, designers and business managers, including issues such as the use of patent information as a source of technological, commercial and legal information;

- Examine current attitudes/practices of financial institutions, including commercial banks, venture capitalists and business angels towards intellectual property and the extent to which IP rights may be used as security for loans;
- Support initiatives to develop practical tools for the valuation of IP assets in order to facilitate the development of a market for IP rights and enable SMEs to better leverage their intangible assets;
- Study the impact of different taxation policies on innovation including tax incentives for the protection or commercialization of IP assets;
- Promote the development of cost-effective mechanisms for the resolution of IP disputes including opposition and review procedures, and greater use of arbitration and mediation;
- Study the development of the market for IP insurance as a tool for reducing the costs of litigation for SMEs, identify existing barriers to its further development and consider whether there is scope for government intervention in this regard;
- Promote technology transfer from research institutes and universities to the private sector by enhancing the development of competent IP-trained technology managers within such institutions and establishing clear rules of the game on IP ownership, royalty-sharing and commercialization of university-owned IP rights;
- Encourage the development of a market for business development services on intellectual property for entrepreneurs and SMEs;

- Promote the study of knowledge and innovation management in clusters, with reference to technology spillovers and management of IP assets at the enterprise and cluster levels;
- Systematically evaluate timeliness, efficiency and cost-effectiveness of any initiatives targeted to enhancing a wider and more effective use of the IP system, develop benchmarks and conduct regular workshops to compare activities developed by different countries in order to identify best practices.

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