opinion with the other branches of government, producing somewhat embarrassing consequences.[37]

It is well to recall that the international legal system has been described as primitive, being as it is, in a state of development. Although the concept of universal laws has begun to gain acceptance in respect of *jus cogens* rules, this view is not without its skeptics.[38] At least, in this jurisdiction, the role of the Supreme Court as the final arbiter of what constitutes municipal *and* international law remains unchallenged, albeit unchecked.

Finally, caution is raised as to the content of the observations presented in this note. They are submitted only with great reluctance, not in any wise purporting to be definitive views on the issues discussed.

37. Indeed, *amicus* briefs and pleadings of competent government authorities should ordinarily eliminate any disagreement. The Court had occasion to explain its role in matters of foreign relations in *DFA v. NLRC*, 262 SCRA 39 (1996), *citing WHO v. Aquino*, 48 SCRA 242 (1972) *viz.*:

> It is a recognized principle of international law and under our system of separation of powers that diplomatic immunity is essentially a political question and courts should refuse to look beyond a determination by the executive branch of the government, and where the plea of diplomatic immunity is recognized and affirmed by the executive branch of the government. . . it is then the duty of the courts to accept the claim of immunity upon appropriate suggestion by the principal law officer of the government, . . . or other officer acting under this direction. Hence, in adherence to the settled principle that courts may not so exercise their jurisdiction . . . as to embarrass the executive arm of the government in conducting foreign relations, it is accepted doctrine that 'in such cases the judicial department of government follows the action of the political branch and will not embarrass the latter by assuming an antagonistic jurisdiction.

Unfortunately, that proscription described as a political question was ignored by the Court in *Liang v. People of the Philippines*, 323 SCRA 692 (2000). The Court ruled that an officer of the Asian Development Bank could be made subject to criminal jurisdiction of Philippine courts over the unequivocal declaration of the government that he enjoyed diplomatic immunity. For an extensive discussion of the case, *see* Joyce Corrine O. Lacson, *Jeffrey Liang v. People of the Philippines: Rethinking the Immunities of International Organizations* (2001) (unpublished J.D. thesis, Ateneo de Manila University School of Law) (on file with the Ateneo Law School library).

38. *See, e.g.*, Florentino P. Feliciano, *The Principle of Non-Refoulment: A Note on International Legal Protection of Refugees and Displaced Persons*, 57 PHIL. L.J. 98 (1982) (questioning the authoritativeness of alleged rules of *jus cogens*).

The Philippine Law on Conditions of Patentability and Patentable Subject Matter

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I. HISTORICAL BACKGROUND OF THE PHILIPPINE PATENT SYSTEM

A. Republic Act No. 165[1]

This law, which took effect on June 20, 1947, established an independent patent system for the country and created the Philippine Patent Office (now known as the Intellectual Property Office). R. A. 165 was patterned mainly on United States patent laws. As such, its provisions on what inventions are patentable, were quite broad, including in its scope any invention of a new and useful machine, manufactured product or substance, or an improvement thereof.[2]

It also adopted the first-to-invent system.

1. An Act Creating a Patent Office, Prescribing Its Powers and Duties, Regulating the Issuance of Patents and Appropriating Funds Therefor, Republic Act No. 165 (1947).

2. Sec. 7. *Inventions patentable.* — Any invention of a new and useful machine, manufactured product or substance, process or an improvement of any of the foregoing, shall be patentable.

   Sec. 8. *Inventions not patentable.* — An invention shall not be patentable if it is contrary to public order or morals, or to public health or welfare, or if it constitutes a mere idea, scientific principle or abstract theorem not embodied in an invention as specified in Sec. 7 hereof, or any process not directed to the making or improving of a commercial product.

B. The Paris Convention[3]

The industrial revolution that occurred in the 19th century gradually demanded greater protection for inventors, but the Intellectual Property Rights (IPR) laws of many countries still had major differences.

Initial attempts at harmonization were made through the adoption of the Paris Convention for the Protection of Industrial Property which was signed in Paris on March 20, 1883, and which entered into force on July 7, 1884. Industrial property relates to patents, utility models, trademarks, and industrial designs.

On September 27, 1965, the Philippines adhered to the Paris Convention as revised in Lisbon in 1958, and on July 16, 1980, as to the revision done in Stockholm in 1967, with regard to Articles 13-30 dealing with administrative matters.

The Paris Convention codified new important provisions,[4] but contained no provision relating to the conditions on patentability or patentable subject matter.

C. The Budapest Treaty[5]

The Philippines became a party to the Budapest Treaty on October 21, 1981. This treaty sets the qualifying standards for institutions to be certified as

3. International Convention for the Protection of Industrial Property, adopted on Mar. 20, 1983, 3 P.T.S. 767, 74 L.N.T.S. 289, *as last revised on* July 14, 1967, 21 U.S.T. 1583, 828 U.N.T.S. 1151.

4. These provisions are:

   National treatment principle, which prohibits domestic laws from discriminating against nationals of other member countries as regards the protection of industrial property.

   Right of priority, which facilitates the filing of patent, trademark, or industrial design applications in member countries. This is done by providing to the applicant the right to claim, as the filing date of his subsequent applications, the filing date of his first application claiming the same invention, provided that they are filed within the convention period counted from the filing date of the first application.

   Independence of patents, which provides that patents applied for in the various member countries shall be independent of patents obtained for the same invention in other countries.

   Mention of the inventor in the patent, although this does not mean that the inventor must be the applicant.

   The right of member countries to take legislative measures providing for the grant of compulsory license to prevent abuses which might result from the exercise of the exclusive rights conferred by the patent; for example, failure to work.

5. Treaty on the International Recognition of the Deposit of Microorganism for the Purpose of Patent Procedure, adopted on Apr. 28, 1977, 32 U.S.T. 1241.

depositories of microorganisms which are the subject of patent applications. That the Philippines acceded to the Budapest Treaty in 1981 gives rise to the indubitable conclusion that it considered microorganisms patentable. It is to be noted that its accession came one year after the United States Supreme Court rendered its landmark decision in *Diamond v Chakrabarty*,[6] finding a bioengineered microorganism patentable.

D. The TRIPS Agreement[7]

The Philippines ratified the agreement establishing the World Trade Organization (WTO) on December 15, 1994, which includes the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

TRIPS is a landmark agreement in the history of intellectual property rights. Not only does it build on the Paris Convention and the Berne Convention,[8] it also breaks new ground by mandating IPR norms and standards to an extent that has not been done in previous treaties on IPRs. In the process, it resolved several difficult questions with broad political, social, and economic implications. Being the only intellectual property rights treaty with a chapter outlining in detail measures for the enforcement of intellectual property rights and providing for a dispute settlement mechanism, TRIPS mandates the extension of patentability to all fields of technology,[9] a uniform term of not less than twenty years from the filing date of the application, and the legal recognition of the patentee's exclusive rights to import the patented product.

E. The Intellectual Property Code[10]

Republic Act No. 8293, otherwise known as the Intellectual Property Code (IP Code), came into force on January 1, 1998. It has three main objectives, to *wit*: first, to improve the enforcement and administration of IPRs in the country by replacing the Bureau of Patents, Trademarks and Technology Transfer (BPTTT) with a larger and better funded institution known as the Intellectual Property Office (IPO); second, to grant more effective protection to patents, trademarks, service marks, and trade names and to facilitate the

6. 447 U.S. 303 (1980).

7. Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 33 I.L.M. 81 (1994).

8. Convention for the Protection of Literary and Artistic Works, Sept. 9 1886, 828 U.N.T.S., *revised recently by* Paris Act relating to the Berne Convention, July 24 1971, 1161 U.N.T.S. 3.

9. R.A. No. 165, § 7-8.

10. The Intellectual Property Code, Republic Act No. 8293 (1998).

transfer of technology by streamlining the examination procedures of applications for patents and marks and the liberalization of regulations on technology transfer; and third, to incorporate into our laws, the norms and standards of the TRIPS Agreement.

The provisions of the IP Code on patents are summarized in a subsequent section of this paper.

II. Introduction to the Patents System

A. What is a patent?

A patent is a statutory grant by government, which confers to an inventor or his legal successor, in return for the disclosure of the invention to the public, the right for a limited period of time, to exclude others from making, using, selling or importing the invention within the territory of the country that grants the patent.[11]

B. The functions of the patent system

It should be emphasized that the patent system is a powerful tool for promoting technical knowledge, and enhancing economic development by means of its three basic functions, namely: protecting inventions, providing technical information, and facilitating the transfer of technology.

1. The Protective Function

The exclusive rights granted to the owner of the patent for a certain period enables the inventor to recoup the cost of inventing, developing, producing and marketing the invention, and provide the incentive for further capital investment in current and future research, that will result in more inventions.[12] The existence of almost any patent will make it necessary for a competitor to do costly design work or even major research of his own, rather than copy an existing product which he wishes to imitate.

2. A Source of Technical Information

Patent documents are sources of valuable technical information because they contain complete disclosures of the invention. Through ongoing efforts at international harmonization of their formalities and language, these documents

11. Intellectual Property Foundation, Primer on the Law on Patents of the Philippines, Part II of Republic Act 8293, the Intellectual Property Code 2 (1999) [hereinafter Primer].

12. *Id.* at 3.

can be exchanged or shared among many countries; hence, serving as important means of disseminating technical information worldwide.[13]

3. Enhancing the Transfer of Technology

Through the patent, the invention becomes an appropriable asset, facilitating its transfer or licensing which is necessary for its commercialization.[14]

C. An Overview of the IP Code as regards Patents

Not all inventions are patentable. Section 21 of the IP Code provides that any technical solution of a problem in any field of human activity which is new, involves an inventive step, and is industrially applicable, shall be patentable. It may relate to a product, process, or improvement on any of the foregoing.[15] The three conditions of patentability of an invention stated in Section 21 are called the *substantive conditions of patentability.*

There are other requirements that must be fulfilled in order to make the granting of a patent for invention possible. One of them is that the subject matter of the claimed invention must belong to a field of technology for which patents are available, that is, are not excluded. The other is that the subject matter must not be contrary to public order or morality.[16]

The patent application itself must comply with some formal requirements. These are that the patent application must be written on paper of a certain size and in a certain way that allows easy reading and multiplication. It has to contain certain parts: request, description, claims, drawings, where necessary for the understanding of the claimed invention and abstract.[17]

Among the substantive requirements that a patent application must comply with are: that rules concerning unity of invention must be respected; that the description must correspond to this prescribed standards of clarity, detail, and completeness; and that the claim be supported by the description.[18]

There are also certain conditions that concern the identity of the applicant. He must be a Filipino, or if he is not, he must be a national or domiciliary of a country which is bound by treaty (such as the Paris Convention or the TRIPS agreement) to grant Filipinos the same rights as it grants its nationals.[19]

13. *Id.*

14. *Id.*

15. The Intellectual Property Code, § 21.

16. *Id.* § 22.

17. *Id.* § 32.

18. *Id.* § 35-38.

19. *Id.* § 31.

The application is given a filing date if it contains: the request for a patent, the name and address of the applicant, the description of the invention and one or more claims in Filipino or English.[20] The date of filing is very important under the current "first-to-file system" because it serves to determine who has the right to the patent, in case of a dispute with another applicant for the same invention. A search is then conducted among published applications and issued patents to determine if the invention has already been disclosed.

The application, together with the results of the search (which contains a list of the published patent applications or issued patents for inventions which are identical or equivalent to the invention claimed by the application), are published in the IPO Gazette. Obviously, this publication provides useful information to research and development institutions in the development of their own technologies. The public is also given the opportunity to submit observations on the patentability of the invention. To protect the applicant against the unauthorized making of his invention, the IP Code gives him all the exclusive rights of a patentee, which he may enforce only against a person who knowingly uses the invention without his authorization. The infringement action, however, may not be filed until after the grant of the patent.[21]

The substantive examination of the application, to determine its patentability, does not follow as a matter of right after the publication of the application. Within six (6) months from the date of the publication, the applicant must decide whether to request for substantive examination. The application is considered withdrawn if no request is made in that period.[22]

In the event that the patent is granted, such grant, together with other related information, are published in the IPO Gazette. The patent takes effect on the date of the publication.[23]

The IP Code confers to the owner of the patent the same exclusive rights. In the case of product patents for invention, the owner is granted the right to make, use, sell, and import the product which includes the invention. In the case of process patents for invention, he is given the right to use the process that includes the invention, as well as the right to make, use, sell, and import products which were made by the process that includes the invention.[24]

There are several exceptions to these rights, *viz*:

> Where the exploitation of the patent is exclusively for private use or for the sole purpose of scientific research and experiment;

20. *Id.* § 40.

21. *Id.* § 44-47.

22. *Id.* § 48.

23. *Id.* § 50.3.

24. PRIMER, *supra* note 11, at 14-15.

Where the patented product is sold by the patentee in the Philippine market (this act "exhausts" his patent rights);

Where the use of the patented product consists of the preparation of a medicine by pharmacists in accordance with a medical prescription; or such use occurs in vehicles in transit in the country.[25]

The other limitations to these rights are those regarding territoriality, *i.e.*, they are in force only in the Philippines; and regarding duration, *i.e.*, they are effective only for twenty years from the filing date of the application.[26] Being subject to rather stringent conditions, a Philippine patent may be exploited without the authorization of the patent owner, by the government or by private entities on the basis of a compulsory license.[27]

If his exclusive rights are violated, the owner of the patent may bring either a civil or administrative action for infringement, the former with the Regional Trial Court (RTC), and the latter with the Bureau of Legal Affairs (BLA) of the IPO, if the amount of damages claimed is not less than PhP200,000.00. If the infringement is repeated, the infringer shall be criminally liable.[28]

III. Conditions of Patentability

A. Novelty

An invention shall be considered new if it does not form part of a prior art. Everything which has been made available to the public before the filing date, and the contents of an application which has already been published, shall be considered prior art.[29]

25. The Intellectual Property Code, § 72.

26. *Id.* § 54.

27. *Id.* § 93.

28. *Id.* § 76-84.

29. Sec. 23. *Novelty.* — An invention shall not be considered new if it forms part of a prior art.

Sec. 24. *Prior Art.* — Prior Art shall consist of:

24.1 Everything which has been made available to the public anywhere in the world, before the filing date or priority date of the application claiming the invention; and

24.2 The whole contents of an application for a patent, utility model, or industrial design registration, published in accordance with this Act, filed or effective in the Philippines, with a filing or priority date that is earlier than the filing or priority date of the application: *Provided*, That the application which has validly claimed the filing date of an earlier application under Section 31 of this Act, shall be prior art with effect as of the filing date of such earlier application. *Provided, further*, That the applicant or the inventor identified in both applications are not one and the same.

Sec. 25. *Non-Prejudicial Disclosure.*

25.1 The disclosure of information contained in the application during the twelve (12) months preceding the filing date or the priority date of the application shall not prejudice the applicant on the ground of lack of novelty if such disclosure was made by:

(a) The inventor

(b) A patent office and the information was contained *(a)* in another application filed by the inventor and should not have been disclosed by the office, or *(b)* in an application filed without the knowledge or consent of the inventor by a third party which obtained the information directly or indirectly from the inventor; or *(c)* a third party which obtained the information directly or indirectly from the inventor.

30. Nissin v. Inoue, Decision No. 82-77 (Nov. 9, 1982).

Sections 23 and 24 of the IP Code differ significantly from their counterpart provisions in R.A. 165. While Section 9 of Republic Act No. 165 allows the applicant a one-year grace period from the date of the public disclosure of the invention to file his application, Sections 23 and 24 of the IP Code withdraw the grace period from the applicant, but instead allow only two instances as non-prejudicial disclosure, *i.e.*, the disclosure by the inventor himself, or by a patent office under certain conditions within twelve (12) months preceding the filing date of the application.

The disclosure of a technical solution such that it becomes part of prior art may take place in three ways, namely: by describing the technical solution in writing, which writing must be published; by describing the technical solution in spoken words, which words must be uttered to the public, such a disclosure called an "oral disclosure;" or by the use of the technical solution in public, or by putting the public in a position that any member may use it, such a disclosure called a "disclosure by use."

It is clear from the language of Section 24 that prior art encompasses all these three ways of disclosure.

The following decisions of the Director of Patents interpreting the provisions of Republic Act No. 165 on novelty are still applicable:

1. Anticipation by Prior Knowledge of Prior Use

i. As Applied to a Combination

Novelty in patent jurisdiction means that a thing is new unless all elements in a combination, except for insignificant differences, can be found in a single prior description or structure where they do substantially the same work in the same way. Thus, in order to support an allegation of lack of novelty when a combination is at issue, the combination in its entirety must be shown to be old.[30]

ii. As Applied to a Process

All the elements or steps of the process in question must be unequivocally met, element by element, in the correct sequence or order, and under the same or identical conditions these steps are carried out by the process, which is allegedly the subject of prior use or prior knowledge.[31]

2. Disclosure in Writing

Newspaper advertisements of "electric welded wire mesh" which neither state what particular wire mesh was being referred to nor mention the machine which produced the wire mesh, are not the printed publication referred to in Section 55 or in Section 9 of the Patent Law. The advertisements did not contain a description of the electric wire mesh machine as patented in favor of the respondent. Hence, the petition to cancel the patent was rightly denied.[32]

3. Disclosure by Use

Pending the result of the test, the modified electronic ballasts were being produced and sold in small quantities. Moreover, the idea of electronic ballasts had been publicly known, as early as July 16, 1982, when the applicant invited managers and sales supervisors of some electrical companies for the introduction and promotion of electronic ballasts. Considering that prior use may be defined as the use of the invention in public, generally for profit, and that the use may be by only one or a limited number of persons, and that an offer to sell the product or machine has been held to be a sale within the meaning of the statute, the above circumstances renders the electronic ballasts publicly known or used prior to the filing of the application.[33]

4. Exception: Experimental Use

On the other hand, it is well settled that the use of an invention by way of experiment, in order to bring the invention to perfection, is not such public use as will make a subsequent patent void.

If the use is to ascertain the utility, value or success of the invention and not for profit, such is regarded as experimental. However, where profit is the main object of the use and improvement only incidental, that use is regarded as public. If a device is used mainly for purposes of trade, the use is a public one though the use is incidentally experimental, since it is the principal use that

31. Acme Show v. General Rubber & Footwear Corp., Decision No. 695 (Mar. 6, 1972).

32. Bonifacio Co. v. Rufino Co Ling, Decision No. 1031 (June 2,1978).

33. *Ex Parte* Frantz Lund *et al.*, Decision No. 507 (Dec. 18, 1968).

gives character to the use in determining whether such use bars an application for a patent.[34]

B. Inventive Step

1. What is meant by *Inventive Step*?

Section 26 of the IP Code provides that an invention involves an inventive step if, having regard to prior art, it is not obvious to a person skilled in the art at the time of the filing date, or the priority date of the application claiming the invention.[35]

The expression "inventive step," conveys the idea that it is not enough that the claimed invention be new, or different from what exists in the state of the art, but that this difference must have two characteristics: it must be *inventive*, that is, a result of a creative idea; and it must be a *step*, that is, it must be noticeable.

2. Meaning of a Person Skilled in the Art

According to Rule 207, from the Rules and Regulations on Inventions:

> The person skilled in the art is presumed to be an ordinary practitioner aware of what was common general knowledge in the art of the relevant date. He is presumed to have knowledge of all references that are sufficiently related to one another and to the pertinent art and to have knowledge of all arts reasonably pertinent to the particular problems with which the inventor was involved. He is presumed also to have had at his disposal the normal means and capacity for routine work and experimentation.

This modified the definition[36] of the Director of Patents in *United Laboratories v. Merck*.[37]

3. Applicable Decision of the Director of Patents

i. No new or unexpected result; Meaning of "Aggregation"

In *Nissin v. Inoue*, the Director of Patents cancelled the patent for an invention relating to a method of making ready-to-eat vermicelli on the ground of *non-*

34. Ortega v. Kahulugan, Decision No. 82-48 (Aug. 9, 1982).

35. The Intellectual Property Code, § 26.

36. The phrase "those skilled in the art," has an established and well-defined meaning in patent practices and jurisprudence. By "person" is meant "workman." "A person skilled in the art" is one who has an ordinary or average knowledge or experience in the particular line, not to mean persons who excel their fellows in particular arts or sciences in which they are skilled, but merely those who have ordinary or fair information and skill in that particular line.

37. Decision No. 82-77 (Nov. 9, 1982).

inventiveness. Citing American jurisprudence, he outlined the following principles:

> Where two or more prior art references are combined to negative patentability, the test applied is whether the prior art suggests doing what the applicant did; it must be considered whether one skilled in the art, with reference before him, could have made the combination of elements claimed without exercise of invention.
>
> A combination patent will not be sustained where the properties and characteristics inherently possessed by several elements combined remain unchanged and no unusual or surprising consequence results from the combination.
>
> Where a process has been fully disclosed in the prior art without full appreciation of all its valuable attributes, the perception of new advantages in the old process does not in itself constitute invention.
>
> The steps of mixing, kneading, forming into strips, cutting, gelatinizing, and frying were standard or basic steps in the process of making ready-to-eat vermicelli, and variations of shape, size, length, ingredients, implements, etc., were determined by the particular characteristics or kind of vermicelli that one desired to prepare.
>
> No new or unexpected result or advantage was seen to emanate from the combination of the old and well-known steps. The objective of the chemical process was to provide "a peculiar taste to the palate," as distinguished from the purpose to prevent the strips from adhering to each other when heated. The particular sensation produced was not a new or unexpected result but merely a manifestation of a characteristic inherent in and deducible from the corrugated or crooked form of the vermicelli strips. [38]

ii. An invention is not patentable if the innovation consists merely in finding a new use for an old product.

The patentability of the product claim must be found in the product itself. In *Ex Parte Icasiano*,[39] the Director of Patents affirmed the Examiner's rejection of the application for a *Bamboo Board which is Rigid, Solid, Light, and Durable, as a Material for Building and Construction Purposes, and which is Resistant to Heat, Weather, Abrasion, and to Deteriorations Caused by Fungus, Termites or other Insects*. The Director ruled that there could possibly be no invention in a boarding material fashioned in practically the same way and possessed basically of the same characteristics as *plywood*, the only difference existing between the two boards being that, while one was made from bamboo plys, the other was fashioned from wood plys. The bamboo board constituted no more than an extension of the original conception of commercial plywood. For that extension, the skill of the mechanic was sufficient; the creative genius of the inventor was not necessary.

The appellant urged that no one in the Philippines had even thought of processing *sawali* and of bending together several sheets of *sawali* so processed

38. Decision No. 695 (Mar. 6, 1972).

39. Decision No. 54 (May 30, 1952).

into a solid, thick, upright board, and that the applicant has substantially advanced the *sawali*-making industry, making *sawali* useful for walls, partitions, panels, ceilings, shingles for roofs, and doors.

Conceding all these, the Director stated that the patentability of the product claim must be found in the product itself, and not solely upon its alleged new functions or uses. Quoting Judge Learned Hand, the Director said that unless conception alone was the test, if the inventor may eke out his right by recourse to the ingenuity involved in any process or machine, he gains an unfair advantage, for such claims covered the products produced by processes and machines to which, by hypotheses, he had contributed nothing.

In contrast, the Supreme Court in *Aguas v. De Leon*[40] affirmed the decision of the Court of Appeals, *viz*:

> We find that plaintiff-appellee has introduced an improvement in the process of tile-making which proceeds not merely from mechanical skill. Said improvement consisting, among other things, in the new critical depth, lip width, easement and field of designs of the new tiles. The improved lip width of appellee's tiles ensures the durability of the finished product preventing the flaking off of the edges. The easement caused by the inclination of the protrusion on his moulds attain an optimum height so that the engraving thereon would be deep enough to produce tiles for sculptured and decorative purposes, strong enough, notwithstanding the deep engravings, to be utilized for walling purposes. The optimum thickness of appellee's new tiles of only 1/8 of an inch at the deepest easement is a most critical feature, suggestive of discovery and inventiveness, especially considering that, despite said thinness, the freshly formed tile remains strong enough for its intended purpose.

C. *Industrial Applicability*

An invention, in order to be patentable, must be of a kind which can be applied for practical purposes. In other words, the invention cannot be purely theoretical. If the invention is intended to be a product or part of a product, that product must be capable of being made. If the invention is intended to be a process, or part of a process, that process must be capable of being carried out or "used," as it is generally said, in practice. "Applicability" in the expression "industrial applicability," means the possibility of making or manufacturing in practice, and "industrial" means a technical activity on a certain scale. The WIPO Model Law for Developing Countries on Inventions provides that "industry" shall be understood in its broadest sense to include handicraft, agriculture, fishery, and services.

40. 111 SCRA 238 (1982).

IV. PATENTABLE SUBJECT MATTER

A. *The Provision of Law*

Sections 21 and 22[41] of the IP Code provide for the nature of patentable and non-patentable inventions. In the context of these two principles, the patentability of (a) computer software, (b) computer-implemented business methods, (c) plant varieties, (d) biotechnology inventions, and (e) traditional knowledge will be discussed.

B. *Patentability of Computer Software*

The considerable economic value of computer software or programs, in conjunction with the use of the personal computer, has drastically changed the way we live and do business. It brings about the compelling need to seek the best remedy provided under the existing intellectual property system to protect computer software.

As defined in the IP Code, a "computer program" is a set of instructions expressed in words, codes, schemes, or in any other form, which is capable, when incorporated in a medium that the computer can read, of causing the computer to perform or achieve a particular task or result.[42]

A great arsenal of protective legal provisions have been adopted in the course of time to obtain adequate protection for software. In both the fields of

41. Section 21. *Patentable Inventions.* — Any technical solution of a problem in any field of human activity which is new, involves an inventive step and is industrially applicable shall be patentable. It may be, or may relate to, a product, or process. or an improvement of any of the foregoing.

Section 22. *Non-Patentable Inventions.* — The following shall be excluded from patent protection:

22.1. Discoveries, scientific theories and mathematical methods;

22.2. Schemes, rules and methods of performing mental acts, playing games or doing business, and programs for computers;

22.3. Methods for treatment of the human or animal body by surgery or therapy and diagnostic methods practiced on the human or animal body. This provision shall not apply to products and composition for use in any of these methods;

22.4. Plant varieties or animal breeds or essentially biological process for the production of plants or animals. This provision shall not apply to microorganisms and non-biological and microbiological processes.

Provisions under this subsection shall not preclude Congress to consider the enactment of a law providing of plant varieties and animal breeds and a system of community intellectual rights protection;

22.5. Aesthetic creations; and

22.6. Anything which is contrary to public order or morality.

42. The Intellectual Property Code, § 171.4

intellectual property (copyright, patent rights) and other juridical means (trade-secret, unfair competition, contracts), attempts have been made to obtain sufficient protection.

The strongest form of protection for computer software or computer-related invention is undoubtedly patent protection. In principle, patent protection extends to any protection which is based on the patented concept. However, not all computer programs are patentable. Computer programs such as, *i.e.*, a list or a set of instructions, are not patentable at all. A computer program may therefore be compared with a patent document: although it describes a patented invention, the patent document itself is not patentable. What might be patentable are inventions in which use is made of a programmed computer (hereinafter referred to as "computer-related inventions").

In order to qualify for patent protection, a computer-related invention should satisfy the general legal requirements imposed upon patentability. To be patentable, an invention should be novel, inventive or non-obvious, and capable of industrial application.[43] Whether the two requirements of novelty and inventiveness are satisfied is a question of fact, and hence has not played any significant part in the discussion of whether computer-related inventions are or are not patentable. In contrast, the third requirement of being "capable of industrial application" has given rise to drastically different concepts as regards patentability in various countries. The following have been held incapable of industrial application, hence, excluded from patent protection: bookkeeping methods, financial operations, systems of education and scientific theories.

As compared with copyright protection, patenting presents an advantage. Patents protect an invention, while copyright protects only the specific form in which a concept is cast. Patents also provide protection against independently developed programs that are based on the same concept. Although the duration of protection given by a patent is generally shorter (17-20 years) than that which is obtained by copyright protection, such duration is generally sufficient for software. In contrast with the protection of software by secrecy, patent protection can easily be maintained, and a license easily obtained.

Patenting also has socio-economic advantages over secrecy. In patenting, the program is published *in extenso*. As a result of this, software development is stimulated. Others can in fact build on the know-how contained in the published patent specification. Moreover, the marketing possibilities are widened for the patentee, in that he can give further publicity to his invention without any further effort.

43. PRIMER, *supra* note 11, at 6.

More than a decade of confusion as to the question of patentability of inventions involving computer software, algorithms, and mathematics may have come to an end as a result of the recent decision by the United States Supreme Court in *Diamond v. Diehr*.[44]

In the case, the claimed invention was a process for molding raw, uncured synthetic rubber into a cured precision product.[45] The process used a mold for shaping the uncured material under heat and pressure, and then cured the synthetic rubber in the mold so that the product would retain its shape and would be functionally operative after the molding was completed. Achieving the perfect cure depended upon several factors, one of which was the temperature of the molding process and the amount of time that the article was allowed to remain in the press. Determining when exactly to open the press and to remove the cured product was critical to achieve a perfect cure. Despite the use of the Arrhenius equation, the industry had not been able to obtain uniformly accurate cures because the temperature of the molding press could not be precisely measured, thus making it difficult to do the necessary computations to determine cure time. This inevitably led in some instances to overestimating the mold opening time and overcuring the rubber, and in other instances, to underestimating the time and undercuring the product. The invention proposed to solve this problem by constantly measuring the actual temperature inside the mold. The temperature measurements were automatically fed into a computer which repeatedly recalculated the cured time by the use of the Arrhenius equation. When the recalculated time equaled the actual time that has elapsed since the press was closed, the computer signaled a device to open the press. According to the applicants, the continuous measuring of the temperature inside the mold, the feeding of this information to a digital computer which constantly recalculates the cure time, and the signaling by the computer to open the press, were all new in the art.

44. 450 U.S. 175 (1981).

45. Sample Claim

> 1. A method of operating a rubber-molding press for precision molded compounds with the aid of a digital computer comprising: providing said computer with a data base for said press including at least natural logarithm conversion data C*ln*1; the activation energy constant (C) unique to each batch of said compound being molded and a constant (*x*) dependent upon the geometry of the particular mold of the press; initiating an interval timer in said computer upon the closure of the press for monitoring the elapsed time of said closure; constantly determining the temperature (Z) of the mold at a location closely adjacent to the mold cavity in the press during molding; constantly providing the computer with the temperature (Z); repetitively calculating in the computer at frequent intervals during each cure, the Arrhenius equation for reaction time during the cure, which is *ln*v=Z + *x*, where x is the total required cure time; repetitively comparing in the computer at said frequent intervals during the cure, each said calculation of the total required cure time calculated with the Arrhenius equation and said elapsed time, and opening the press automatically when a said comparison indicates equivalence.

Is the computer-related invention patentable under the U.S. Patent Law?[46] In defining the nature of a patentable process, the Court stated:

> That a process may be patentable, irrespective of the particular form of the instrumentalities used, cannot be disputed. A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as a piece of machinery.[47]

The Court ruled that respondents' claims involved the transformation of an article, raw uncured synthetic rubber, into a different state or thing. It is therefore patentable.

In arriving at this conclusion, the court took into account its rulings in *Gottschalk v. Benson*,[48] and *Parker v. Flook*,[49] both of which are computer-related. It went on to state:

> In *Benson*,[50] we held unpatentable claims for an algorithm used to convert binary code decimal numbers to equivalent pure binary numbers. The sole practical application of the algorithm was in connection with the programming of a general purpose digital computer. We defined "algorithm" as a "procedure for solving a given type of mathematical problem, and we concluded that such an algorithm, or mathematical formula, is like a law of nature, which cannot be the subject of a patent."
>
> *Parker v. Flook* presented a similar situation. The claims were drawn to a method for computing an "alarm limit." An "alarm limit" is simply a number and the Court concluded that the application sought to protect a formula for computing this number. Using this formula, the updated alarm limit could be calculated if several other variables were known. The application, however, did not purport to explain how these other variables were to be determined nor did it purport "to contain any disclosure relating to the chemical processes at work, the monitoring of process

46. Sec. 101. Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain a patent therefor.

47. 450 U.S. 175, 183 (1981).

48. 409 U.S. 63 (1972).

49. 437 U.S. 584 (1978).

50. Sample Claim

> "The method of converting signals from binary coded decimal form into binary which comprises the steps of –
>
> (1) storing the binary coded decimal signals in a reentrant shift register.
>
> (2) shifting the signals to the right by at least three places, until there is a binary '1' in the second position of said register.
>
> (3) masking out said binary '1' in said second position of said register.
>
> (4) adding a binary '1' to the first position of said register.
>
> (5) shifting the signals to the left by two positions.
>
> (6) adding a '1' to said first position; and
>
> (7) shifting the signals to the right by at least three positions in preparation for a succeeding binary '1' in the second position of said register."

> variables, or the means of setting off an alarm system. All that is provided is a formula for computing an updated alarm limit.[51]

The Court, however, adopted the ruling in *Flook* that a mathematical formula does not become patentable by limiting the claim to a particular field or to a specific end use. In *Diehr*, the process was said to do precisely that: it employed the Arrhenious equation to characterize a calculation. This calculation was a limited technological field, namely, the curing of rubber articles. The Court distinguished the claims in *Diehr* from those in *Flook*, in that the *Flook* application made no disclosures relating the chemical conversion process, how the process variables were to be selected, the means of activating the claims or how to update the alarm limits. The *Diehr* application, on the other hand, claimed an industrial process for molding rubber products, citing particulars of that process:

> These include installing rubber in a press, closing the mold, constantly determining the temperature of the mold, constantly recalculating the appropriate cure time through the use of the formula and a digital computer, and automatically opening the press at the proper time. Obviously, one does not need a "computer" to cure natural or synthetic rubber, but if the computer use incorporated in the process patent significantly lessens the possibility of "overcuring" or "undercuring", the process as a whole does not thereby become unpatentable subject matter. ...
>
> Because we do not view respondents' claims as an attempt to patent a mathematical formula, but rather to be drawn to an industrial process for the molding of rubber products, we affirm the judgment of the Court of Customs and Patent Appeals.[52]

Justice Stevens, with whom three other Justices joined, dissented. Analyzing the claims of *Diehr* and *Lutton*, Justice Stevens found that nothing was taught about the chemistry, the raw materials, the equipment, the process variables such as temperature, curing time, decomposition of material, or the mold configurations to be used in curing synthetic rubber. Therefore, he argued that *Diehr* and *Lutton* did not claim to have discovered anything new about the process for curing synthetic rubber. The inventors characterized their contribution to the art to reside in the process of constantly measuring the actual temperature inside the mold. There were three reasons why such a reading of the claims was not acceptable, Justice Stevens argued. First, the patent application did not suggest at all that there was anything unusual about the temperature reading devices used in the process. Second, devices to constantly measure actual temperatures were quite familiar articles at the time the application was filed. Finally, the only difference between the conventional method of operating a molding process, and that claimed in the application rested in those steps of the claims which relate to the calculation incident to

51. 450 U.S. 175, 186-87 (1981).

52. *Id.* at 188-93.

the solution of the mathematical problem or formula used to control the mold heater and the automatic opening of the press.[53]

In Mr. Justice Stevens' opinion, the discovery of *Diehr* and *Lutton* was nothing more than an improved method of calculating the time that the mold should remain closed during the curing process. This method of updating the curing time calculation was strikingly reminiscent of the method of updating alarm limits in *Flook*. Mr. Stevens was critical of the distinction the Court made between *Flook* and the present case:

> In its effort to distinguish *Flook* from the instant case, the court characterizes that post solution activity as "insignificant," or merely as "token" activity. As a practical matter, however, the post solution activity described in the *Flook* application was no less significant than the automatic opening of the curing mold involved in this case. For setting off an alarm limit at the appropriate time is surely as important to the safe and efficient operation of a catalyctic conversion process as is actuating the mold opening device in a synthetic rubber curing process. In both cases, the post solution activity is a significant part of the industrial process. But in neither case should that activity have any less significance because it does not constitute a part of the inventive concept that the applicants claimed to have discovered.[54]

Justice Stevens argued that for practical reasons, it would be better that no program–related invention should be a patentable process, unless it makes a contribution to the art that is not dependent entirely on the utilization of a computer.

The majority opinion responded to the dissenting opinion, stating that the claims of the *Diehr* application are not limited to the isolated step of programming a digital computer. The court emphasized that, "the fact one or more of the steps in the respondent's process may not, in isolation, be novel or independently eligible for patent protection, is irrelevant to the question whether the claims as a whole recites subject matter eligible for patent protection under Sec. 101.[55]

The *Diehr* decision is a courageous decision. The Supreme Court, after calling for congressional guidance in *Bengson* and *Flook*, no longer sought Congress' assistance, but rather used its judicial prerogative to interpret the statute in a broad way. It emphasized, "the court should not read into the patent laws limitations and conditions, which a legislature has not expressed." In retrospect, the *Diehr* decision presented a compromise that suited all parties involved, namely, the Patent Office, industry — both hardware and software — and the government.[56]

53. *Id.* at 208-09.

54. *Id.* at 216.

55. *Id.*

56. The discussion on the *Diehr* case in this paper is based in many respects on HENRI W. HENNEMAN, THE PATENTABILITY OF COMPUTER SOFTWARE (1985).

C. *Patentability of Computer-Implemented Business Methods*

Electronic commerce is an extremely significant component of today's technology-driven economy. Computer-Implemented Business Methods patents play an important role in this growing industry.

The number of patent applications in the United States related to computer-implemented business methods grew from 1,300 to 2,600 between 1998 and 1999. Much of this growth may be attributed to the United States Court of Appeals for the Federal Circuit decision in *State Street Bank & Trust Co. v. Signature Financial Group Inc.*[57]

In this case, State Street brought a declaratory judgment action asserting invalidity, unenforceability, and non-infringement in the Massachusetts district court of U.S. Patent No. 5 193 056 ('056 patent) which was assigned to Signature Financial Group. '056 patent entitled "Data Processing System for Hub and Spoke Financial Services Configuration," concerns a data processing system (the system) for implementing an investment structure which was developed for use in Signature's business as an administrator and accounting agent for mutual funds. In essence, the system, identified by the proprietary name *Hub and Spoke®*, facilitates a structure whereby mutual funds (Spokes) pool their assets in an investment portfolio (Hub) organized as a partnership.

The issue the Court has to resolve is whether the claimed invention is patentable under Section 101 of the U.S. Patent Law, which reads:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

In holding that it is, the court stated that:

> Claim 1, properly construed, claims that a machine, namely, a data processing system for managing the financial services configuration of a portfolio established as a partnership, which machine is made up of, at the very least, the specific structures disclosed in the written description and corresponding to the means-plus-function elements (a)-(g) recited in the claim. A "machine" is proper statutory subject matter under §101. We note that, for the purposes of a §101 analysis, it is of little relevance whether claim 1 is directed to a "machine" or a "process," as long as it falls within at least one of the four enumerated categories of patentable subject matter, "machine" and "process" being such categories.[58]

The Court, in *State Street*, further discussed the exceptions that are unpatentable.

With regard to mathematical algorithms, the Supreme Court has identified three categories of subject matter that are unpatentable, namely "laws of nature, natural phenomena, and abstract ideas." Of particular relevance to this case, the

57. 149 F. 3d 1368 (1998).

58. *See id.*

Court has held that mathematical algorithms are not patentable subject matter to the extent that they are merely abstract ideas. In *Diehr*, the Court explained that certain types of mathematical subject matter, standing alone, represent nothing more than abstract ideas until reduced to some type of practical application, *i.e.*, "a useful, concrete and tangible result."[59] The transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces "a useful, concrete and tangible result" – a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and subsequent trades. The question of whether a claim encompasses statutory subject matter, should not focus on which of the four categories of subject matter a claim is directed to – process, machine, manufacture, or composition of matter – but rather on the essential characteristics of the subject matter, in particular, its practical utility. Section 101 specifies that statutory subject matter must also satisfy the other "conditions and requirements" of Title 35, including novelty, non-obviousness, and adequacy of disclosure and notice. For purpose of the Court's analysis, claim 1 is directed to a machine programmed with the Hub and Spoke software and admittedly produces a "useful, concrete, and tangible result." This renders it statutory subject matter, even if the useful result is expressed in numbers, such as price, profit, percentage, cost, or loss.[60]

As far as Business Methods are concerned, there is an alternative ground for invalidating the '056 patent under § 101. The Business Method exception has never been invoked by the Court, or the CCPA, to deem an invention unpatentable. Application of this particular exception has always been preceded by a ruling based on some clearer concept of Title 35 or, more commonly, application of the abstract idea exception based on finding a mathematical algorithm.[61]

D. *Are the* Diamond v. Diehr *and* State Street v. Signature Financial Group *decisions applicable in the Philippines?*

It should be stressed that under Sections 21 and 22.2 of the IP Code, the provisions on patentability of computer-related inventions and computer implemented business methods are substantially of the same scope, if not broader, as that in Section 101 of the U.S. Patent Law. The fact that the terminology used in Sections 21 and 22.2 differ from those in Section 101 of the U.S. Patent Law is not significant. It should be noted that the language used in Section 21 of the IP Code is similar to the provision on "patentable

59. *See* 450 U.S. 175, 185 (1981).

60. State Street v. Signature, 149 F. 3d 1368 (1998) (alteration in original) (citations omitted).

61. *Id.*

inventions" in the European Patent Convention[62] and that of Article 27 of the TRIPS Agreement. We cannot conceive of any definition of patentable inventions broader than that made under Article 27 of TRIPS.[63] The matters Sec. 22.2 considers as non-patentable, *viz*: "schemes, rules and methods of performing mental acts, playing games, or doing business, and programs for computers," are also treated in the same way in *Benson, Flook* and *Diehr*.

The challenge posed is whether to accept the majority of the U.S. Supreme Court decision in *Diehr* or to adopt Justice Stevens' dissent in that case. The author views the dissenting opinion of Justice Stevens as more consistent with the traditional concept of patent law that a mathematical algorithm is not patentable. In fact, if the Philippines were to hold this view, we would not be violating any of the norms and standards of the TRIPS Agreement on conditions of patentability and patentable subject matter.

The immense value of computer software, however, to the world economy and the competitive advantage of the Philippines in IT-related businesses due mainly to our highly skilled and English speaking labor sector, should persuade us to look for other ways to provide adequate protection for computer software. One possible way would be the adoption of a *sui generis* protection of computer software. To this end, the Philippines and the other ASEAN members should submit a proposal to the World Intellectual Property Organization (WIPO) to consider the adoption of a multilateral treaty to grant such protection to inventions involving computer software. This is an approach which was taken to provide protection for integrated circuits and layout designs, which culminated in the adoption of the Treaty on Intellectual Property in Respect of Integrated Circuits of 1989.[64] A decisive step has to be taken to adopt a liberal interpretation of our patent laws following the example of the United States Supreme Court in *Diehr*, a step taken by more countries, such as Japan and Australia. No doubt, this course of action would be consistent with the policy of the IP Code that recognizes the vital nature of effective intellectual and industrial property system.[65]

62. Convention on the Grant of European Patents, Oct. 5, 1973, 13 I.L.M. 270.

63. Article 27. *Patentable Subject Matter.* - Subject to the provisions of paragraphs 2 and 3, patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application. Subject to paragraph 4 of Article 65, paragraph 8 of Article 70 and paragraph 3 of this Article, patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.

64. May 26, 1989, 28 I.L.M. 1484.

65. Sec. 2. *Declaration of State Policy.* — The State recognizes that an effective intellectual and industrial property system is vital to the development of domestic and creative activity, facilitates transfer of technology, attracts foreign investments, and ensures market access for our products.

E. Plant Varieties

Breeding new varieties of plants requires substantial investment in terms of skill, labor, money and time. Thus, protection is afforded to new varieties by means of IPRs (which may be referred to as plant breeders' rights) both as an incentive to the development of agriculture, horticulture, and forestry, as well as to safeguard the interests of plant breeders. The opportunity to obtain certain exclusive rights in respect of his or her new variety, provides the successful breeder with a better chance of recovering costs and accumulating the funds necessary for further investment. It also enables him to organize productivity, as well as to trade-in seeds and propagating material (such as cuttings) in such a way that his or her variety is made available to farmers in an effective manner. In some cases (for example, cut flowers), the breeder can also contribute to the organization of the productivity and trade-in of the product sold to consumers.

The IP Code opted to exclude from patentability plant varieties, or animal breeds, or essentially biological processes, for the production of plants or animals. To comply with our obligation under the TRIPS Agreement, our Congress would need to enact a separate law to establish an effective system for the protection of plant varieties. To carry this out, it may have to adopt the standards set by the UPOV Convention[66] as revised in 1991.

Already signed by many countries,[67] the UPOV Convention of 1991 provides a twenty year term of protection for new plant varieties whether of natural or artificial origin, on condition that each such variety should be *distinct, uniform* and *stable*. The breeders' exclusive rights with respect to propagating materials of a protective variety includes not only commercial production, sale and marketing, but also reproduction, propagation, or condition, as well as the export, import, or stocking of relevant material for any of these purposes. The revised convention extends breeders' rights to products made directly from harvested materials in certain circumstances. It also provides a range of equivalents that encompass derived varieties for the first time, while recognizing only a narrow exception for farmers who use the products of their own harvests. It also provides broad exception for research purposes. At the same time, the 1991 amendments extend the field of application to cover the entire plant kingdom and not just species of interests to single States.

While UPOV focuses exclusively on the protection of plant varieties for commercial breeders, the International Undertaking on Plant Genetic Resources (Undertaking) of the Food and Agriculture Organization (FAO) adopts a broader perspective and considers farmers' rights and commercial breeders' rights to be equal and complementary. In the revised Undertaking

66. Union Internationale pour la Protection des Obtentions Vegetales, Oct. 23, 1978, 1861 U.N.T.S. 281, *as amended on* Mar. 19, 1991, *reprinted in* 3 Eur. Pat. Handbook, Ch. 90.

67. The Philippines is not a signatory to this Convention.

currently under discussion, farmers' rights include the protection of farmers' traditional knowledge, their right to a share of the benefits arising from the utilization of genetic resources tended by them and the right to participate in taking decisions concerning the conservation and use of plant genetic resources in agriculture. It is suggested that our legislature take these United Nations draft proposals into consideration when it deliberates on the pending bill on the protection of new plant varieties.

F. Biotechnology Inventions

1. In General

Biotechnology is a field of technology whose importance has grown considerably in recent years. Indeed, it appears possible that biotechnology inventions will have a very significant effect on our future, particularly in the fields of medicine, food, energy, and protection of the environment.

Biotechnology concerns living organisms, such as plants, animals, and microorganisms, as well as non-living biological material, such as seeds, cells, enzymes, plasmids (which are used in genetic engineering), and the like. Biotechnology inventions fall into three categories: the processes for the creation or modification of living organisms and biological material, the results of such processes, and the use of such results.

In recent years, as a result of scientific discoveries, it has become possible to develop biological processes that manipulate living organisms. These processes may be entirely controlled by man. The most notable examples of such processes occur in the artificial modification of genes, otherwise called genetic engineering. These processes are able to change the materials determining the hereditary characteristic of living organisms, making it possible to create modified organisms which have certain desirable features. Genetic engineering processes are also used in the modification of microorganisms for the production of new medicine. Biotechnology is expected to lead to important breakthroughs in medicine which may be effective in combating diseases such as cancer and AIDS. It may also lead to new opportunities for obtaining food and energy, and provide solutions to the problems of pollution of the environment.

2. Microorganisms

Are genetically engineered living organisms patentable? The United States Supreme Court in the landmark case of *Diamond v. Chakrabarty*,[68] ruled in the affirmative. In *Chakrabarty*, the U.S. Supreme Court had to decide the

68. 447 U.S. 303 (1980).

patentability of certain microorganisms which Dr. Chakrabarty had engineered to give them an appetite for eating oil slicks. By a majority decision, the Court held that a patent could be granted, stating that "anything under the sun that is made by man" was potentially patentable. Accordingly, while there is no denying that living material can be patented, the fundamental principle which holds equally true in the Philippines, is that one cannot patent "nature." One can only patent a product of human invention.

As a corollary to the foregoing, it is not possible to patent a molecule in exactly the same form in which it is known in nature, as the product would then lack novelty. However, a long history of patent cases in Europe and the US, consistent with Philippine law, shows that it is possible to patent a product originating from natural sources in a form in which it does not occur naturally, such as in a highly purified form. Thus, an antibiotic isolated from a microorganism present in a soil sample is regarded as novel, and provided it exhibits a technical effect capable of "industrial application," is not regarded as an unpatentable "discovery."

3. Animal Breeds

Regarding the patentability of bio-engineered animal breeds such as the "oncomouse" (a mouse into which has been introduced a cancer-forming gene, making it a valuable animal for testing anti-cancer drugs, and was found patentable under U.S. law), our IP Code has the so-called "morality provision" and also a provision which bars the patenting of "animal breeds."

To resolve this question, it must be considered that the European Patent Convention has a provision identical to that of the IP Code expressly excluding "animal breeds" from patentability,[69] but not microorganisms. Reference is made to the decision of the Technical Board of Appeals of the European Patent Office on October 3, 1990 (Case No. T19/90) on the patentability of the oncomouse. The Board of Appeals decided that notwithstanding the exclusion, there being no question that the process — the insertion of an oncozone by technical means into a vector (*e.g.* plasmid), which is then microinjected at an early embryonic stage, is a microbiological process — the oncomouse, which is the product of the process, is patentable. As to whether or not its patenting would be contrary to public order or morality, the Board of Appeals remanded the task of resolving this issue to the patent examiners. It opined, however, that whether the genetic manipulation of mice in such a way that they become prone to develop tumors, and that their release might produce adverse effects to the environment, would depend on a careful balancing of the resulting risks and the invention's usefulness to mankind.

69. The Intellectual Property Code, § 22.4.

What would be the appropriate policy of our government on the patenting of animal breeds? The strongest argument in favor of adopting the United States and European position would be that unless the inventor is given the exclusive rights to exploit his invention, he cannot recover the cost of his investment, which would be considerably large, and obtain a profit from his efforts. With such an event, the inventor will not be motivated to undertake research and development work. Mankind will be the loser. On the other hand, if the patenting of animal breeds would result in the development of unwholesome economic dependencies on multinationals, which may stifle competition, these inventions should not be patented. In the current globalized economy, with greater economic interdependence among the countries of the world, such course of action might result in more harm than good to our national interest.

G. Traditional Knowledge

The provision in the second paragraph of Section 22.4, reserving the right of Congress to enact a law providing for a system of community rights protection, cannot be interpreted in any other way, except as a recognition of the future need to protect the so-called traditional knowledge of the many indigenous people in our country. On this matter, there is ongoing study and research in the UNESCO and the WIPO. Model provisions for national laws on the protection of folklore have been drawn by these United Nations agencies. These are *sui generis* proposals, which means that they are not linked to, but are an entirely different system of protection from the IP system put in place by the TRIPS Agreement. The subject matter of protection as gathered by the IPO worldwide fact-finding mission in 1998-99 encompasses their *heritage*.

Heritage comprises all objects, sites and knowledge, the nature or use of which has been transmitted from generation to generation, and which is regarded as pertaining to a particular indigenous group or its territory. The heritage of an indigenous people is a living one and includes objects, knowledge, literary and artistic works which may be created in the future based on that heritage.

According to the WIPO fact-finding mission, one of the objectives that motivate indigenous group to seek protection of traditional knowledge addresses a very serious concern of the developing world, home to a rich array of the world's plants, animals, and microorganisms, *i.e.*, the protection and conservation of cultural and biological diversity. Our legislatures would serve the interest of our indigenous tribes and our national interest well by enacting a *sui generis* system of community intellectual rights protection patterned after the model drafted by United Nations agencies.

As a party to the Convention on Biological Diversity,[70] the Philippines is bound to implement as far as possible and appropriate, although subject to national law, the mandate of Article 8(j), *viz*:

> [t]o respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

70. United Nations Convention on Biological Diversity, June 5, 1992, *reprinted in* 31 I.L.M. 818 (1992).