 CHAPTER 3

PATENTS: A HISTORICAL REVIEW

Imagination is more important than knowledge because knowledge is limited but imagination encircles the world.

-Albert Einstein

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Chapter 3: Patents: A Historical Review

Patents are covered under IPR and it is an authoritative tool for protecting inventions. IPR initiatives are developing fast all over the world. Patent system has received importance in R & D sector. Patent rights play an important role in global economy. Patents give legal rights to patent owners for their inventions for tenure of twenty years. Patents are technical as well as legal i.e. ‘Technolegal’. A brief historical development of patent system is presented in succeeding sections.

3.1 Historical Development of Patent System:

IPR is established for protecting intellectual products developed by human mind. Patent filing is gaining momentum all over the world. In fact, patent system is an age old concept for protecting the rights of inventors by a national agency for a specified period. Patent system was developed for the purpose of recognition of the innovator and to reward him for his valuable contribution of innovative ideas, by means of a formal system, to encourage technical developments and fair practices in a competitive age.

The practice started by issuing the ‘Open Letters’ and users have been granted permission to access these documents. The term Open Letters is derived from the Latin term ‘Litterae Patentees’. Patent system was introduced in the advent of 15th century in Italy (Ganguli, 1998). In 500 BC, in the Greek city of Sybaris (located in what is now known as southern Italy), "encouragement was held out to all who should discover any new refinement in luxury, the profits arising from which were secured to the inventor by patent for the space of a year." (Anthon, 1841). In this way the first patent known to be granted was to a Florentine architect, Filippo Brunelleschi in the Republic of Florence, and he received a three year patent. Awarded an industrial patent (the first person to do so) for a barge with hoisting gear which was used to carry marble along the Arno River in 1421(MacLeod, 2002). Patents in the modern sense originated in 1474, when the Republic of Venice enacted a decree by which new and inventive devices, have to be communicated to the Republic in order to obtain the right to prevent others
from using them (Patents Ordinance). It was also recorded that in England, earliest patents were given to John of Utynam in 1449 for “stained glass” for twenty years monopoly (Encyclopedia Britannica, 1974).

Subsequently, England followed the ‘Statute of Monopolies’ in 1623 under King James I, who declared that patents could only be granted for ‘projects of new invention’. During the reign of Queen Anne (1702–1714), lawyers of the English Court demanded that a written description of the invention must be submitted (Intellectual Property Office, UK, 2006). In United States, during the so-called colonial period and Articles of Confederation years (1778–1789), several states adopted patent systems of their own. The first Congress adopted a Patent Act, in 1790, and the first patent was issued under this Act on July 31, 1790 (to Samuel Hopkins of Vermont for a potash production technique) (Simmons, 1996).

3.1.2 Statutes on Patents Developed in Various Countries

Following table provides the chronological development of patent system all over the world:

**Table 3.1 Statutes on patents developed in different countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
</tr>
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<tbody>
<tr>
<td>USA</td>
<td>1790</td>
</tr>
<tr>
<td>France</td>
<td>1791</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1809</td>
</tr>
<tr>
<td>Austria</td>
<td>1810</td>
</tr>
<tr>
<td>Russia</td>
<td>1812</td>
</tr>
<tr>
<td>Bavaria</td>
<td>1812</td>
</tr>
<tr>
<td>Prussia</td>
<td>1815</td>
</tr>
<tr>
<td>Sweeden</td>
<td>1826</td>
</tr>
<tr>
<td>Country</td>
<td>Year</td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td>Spain</td>
<td>1826</td>
</tr>
<tr>
<td>Canada</td>
<td>1826</td>
</tr>
<tr>
<td>Mexico</td>
<td>1832</td>
</tr>
<tr>
<td>Texas</td>
<td>1839</td>
</tr>
<tr>
<td>Brazil</td>
<td>1840</td>
</tr>
<tr>
<td>Chile</td>
<td>1646</td>
</tr>
<tr>
<td>Great Britain</td>
<td>1852</td>
</tr>
<tr>
<td>India</td>
<td>1856</td>
</tr>
<tr>
<td>Italy</td>
<td>1859</td>
</tr>
<tr>
<td>Germany</td>
<td>1877</td>
</tr>
</tbody>
</table>


Patent system changed its form with the industrial revolution followed by subsequent changes such as: advances in science and technology, international trade practices and invention-based commercial benefits in the society. This situation saw setting up of various patent conventions like Paris Convention Treaty (PCT) 1883. The internationalization of commerce in late 19th century developed filing of patent applications in each country where the inventor wants to exclude others from practicing the invention. This gave motivation for development of international treaty of patent applicants. In 1883, the Paris Convention for protection of Industrial Property granted the benefit, that an applicant of a patent in one member state can file applications for patents in all other member states within one year of original filing date and right will be given to the claimed invention as of the priority date established by the first filing. (Barnett, 1953)
In view of growing importance of patents, the Paris Convention was revised many times and included over 173 members as on 2nd August 2008 (Granstrand, 1999). The Convention handles all forms of IP. India is one of the member countries.

The screenshot of growth of patents filed from 1850 to 2000 is given below, which indicates a steady growth.

![Fig. 3.1 Growth of Patents from 1850 to 2000](Source: http://en.wikipedia.org/wiki/Patent)

### 3.2 History of Patent Literature:

Simmons (1996) pointed out that the patent system was established by industrialized countries during the period of Industrial Revolution. This system was developed to provide incentives for development of technology and information to next generation of inventors. Patents rights are given to protect the manufacturing method, usage and sale of invention claimed in the patent. Patentee has the right to license, reassign or sell the rights conferred by the patent and protect the invention from infringement, unauthorized
manufacture, use or sale of the product. Patents are granted by national governments and have effect only within the granting state.

The mid of 20th century has witnessed a sharp increase in research and development as well as internationalization of technology-based industries. This resulted change in patent literature which emerged as the core literature of technology. In this process, number of countries publishing the patent documents increased. The former communist and the Third world countries enacted patent laws. The number of patent issuing authorities increased. Further enactment of new patent laws by other countries in response to IP provisions of the GATT (General Agreement on Tariffs and Trade) established the World Trade Organization (WTO) and North American Free Trade Agreement (NAFTA).

Later, individual countries developed their own patent laws and procedures for protecting IP. The growth in filing of patent applications led to increase in the number of patent offices between 1964 and 1979. Patent applications were examined and only those found worthy were declared as granted patent. In 1940’s most of the published patent documents were granted patents. However since 1990’s, unexamined patent applications started getting published. Until 1970’s all patents were effective only in the country in which they were issued, but in 1990’s there were several types of international patent applications like European Patent which provides rights by European Patent Organization (EPO), which is a group of 17 European countries. Later, Eurasian Patent Convention was established in 1994 by 11 former member states of Soviet Union. Two regional organizations covering few African nations were granted patents by the African Intellectual Property Organization (OAPI) for 14 French speaking countries and also to the African Regional Industrial Property Organization (ARIPO) for 11 English speaking countries. Patent Cooperation Treaty (PCT) applications provided means for filing applications for patents with multiple patenting authorities via a single application. PCT applications are examined and published by WIPO prior to examination, under the national patent law of each member states.
3.2.1. Milestones in the Development of Patent Literature:

An attempt is being made to provide significant landmarks in the process of development of patent literature.

**Table 3.2** Milestones in development of patent literature

<table>
<thead>
<tr>
<th>Year</th>
<th>Country or Authority</th>
<th>Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964</td>
<td>The Netherlands</td>
<td>First principle examining office to switch to universal publication and differed examination</td>
</tr>
<tr>
<td>1968</td>
<td>FRG (Germany)</td>
<td>Switched to universal publication</td>
</tr>
<tr>
<td>1971</td>
<td>Japan</td>
<td>Switched to universal publication, and increased the output @1,00,000/yr</td>
</tr>
<tr>
<td>1979</td>
<td>European Patent Office (EPO)</td>
<td>Single patent office covering multiple countries</td>
</tr>
<tr>
<td>1979</td>
<td>World Intellectual Property Organization (WIPO)</td>
<td>Single application for multiple countries and regional offices, increased the share of English Languages Documents</td>
</tr>
<tr>
<td>1980</td>
<td>United States</td>
<td>Periodic maintenance payments for granted patents, for 1980 December onwards</td>
</tr>
<tr>
<td>1995</td>
<td>United States</td>
<td>Switch to 20 year term from file date</td>
</tr>
</tbody>
</table>

(Source: http://www.mrw.interscience.wiley.com/kirk/articles/patesimm.a01/sec11.htm)

It is commonly believed that patent literature is a major information resource which describes new technologies and new concepts. Patent literature is different from any other information source as the information disclosed in this literature is not published elsewhere. It provides valuable Current Awareness Service for researchers, R & D managers, technologists, and forecasters to enable them to predict as well as formulate corporate policies and strategies. The major advantage of patent literature is to indicate gaps in the area of research where inventor or assignee can put efforts to innovate their
new ideas. At this stage it becomes essential to know the real implication of following concepts in context of research work.

### 3.2.2 Innovation

Innovation implies novel and accepted changes in the society (Barnett, 1953). Innovations are fundamental not only to technological and economic development but also to the cultural development at large and there are different types of innovations like technological or technical, service innovation, financial innovations, managerial innovations, organizational innovations, marketing and distribution innovations, cultural innovations etc. Out of these, technical and technological inventions or innovations (which can be divided in to product and process) are patentable and the rest are non patentable innovations (Granstrand, 1999), (only supporting technologies used may be patentable). Innovation is related to a change in ideas, practices, or objects involving some degree of novelty or any creation based on human ingenuity, success in applications etc.

### 3.3 Property and its Kinds:

Property is summarized as something owned by someone, which may be tangible or intangible in possession. There are two kinds of property: Physical Property and Mental Property. These are also termed as Material Property and Abstract Property. The Material property deals with matter and has two kinds i.e. Movable (Owner is free to authorize others to use his property e.g. Cars, vehicles, Camera etc.) and Immovable property (The property is not transferable easily e.g. land, house etc.). The Abstract Property deals with existence in thought rather than matter i.e. intangible things rather than a concrete object. Intellectual Property (IP) is Abstract Property which is nothing but human intellect and it is intangible.

#### 3.3.1 Characteristics of Property

The main characteristics of property are:

- Right to possess
Right to own
Right to peaceful use
Right to transfer

3.4 Intellectual Property:

Intellectual property (IP) refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images, and designs used in commerce. (WIPO, http://www.wipo.int/about-ip/en/). Such creations get status of property due to its commercial value. Intellectual Property Rights (IPR) protect such Intellectual Property. The Law, which helps in protecting such properties, is called Intellectual Property Law (IP Law). Intellectual property is a generic term, which encompasses all expressions of human creativity. (Ius Mentis, http://www.iusmentis.com/ip/). Ownership of intellectual property is usually expressed as 'Intellectual Property Rights'. These are individual rights, which are acquired due to ownership of intellectual property. In general, these are monopoly rights to use intellectual property. There are many different ways in which rights may be asserted. Some of these are automatic and some require formal registration to achieve protection. In any case, it is for owner of the rights to police for infringement.

IP is a creation of human mind and intellect, idea and thought which turns out to development of products, processes, works, trademarks or designs. The types of IP are Industrial Property (Patents, Trademarks, Geographical Indicators, Industrial Designs, Trade secrets) and Copyright & Neighboring Rights (Writings, Musical work, Dramatic work, Paintings, Drawings and AV material)

Intellectual Property is essentially required to

- Protect intellectual assets
- Secure monetary benefits for the inventor
- Establishing rights
- Creation of national wealth
- Encourage R & D activities in industries
- Socio economic benefits to be derived
- Technology transfer

Any intellectual property right is subject to limitations in several ways:

- Rights exist for a limited period.
- Rights are restricted geographically.
- Rights are limited by subject matter.
- Rights are potentially limited by competition and free movement requirements.

There are different types of IPs. Intellectual and industrial property (WIPO, http://www.wipo.int/about-ip/en/) are the basic forms. The distinction between intellectual and industrial property is, intellectual property covers copyright and related rights, whereas industrial property means patents, trademarks, trade secrets, plant breeder's rights etc. Traditionally this distinction was made because Industrial Property Rights were mostly used by industry, whereas Intellectual Property Rights are used by artists, writers and other creative people. Today the distinction between these two has disappeared and use of the term ‘Intellectual Property’ includes patents and other items that are traditionally considered under industrial property.

The types of Intellectual Property are illustrated in the following Chart;

![Chart of Types of IP](#)

**Fig. 3.2** Types of IP
- Patents - Deal with novel inventions
- Trademarks - Deal with signs used for goods or services
- Geographical Indicators - Deal with origin of goods and services for promoting commerce
- Industrial Designs - Aesthetic creations
- Copyright - Deal with creativity of authorship, writings of an author
- Trade Secret - Deal with protection to undisclosed information
- Integrated circuits - Deal with typographic designs

A modest attempt is made in the following paragraphs to highlight meaning and nature of types of IP.

3.4.1 Patents:

WIPO (http://www.wipo.int/about-ip/en/patents/) defined patent as ‘It is an exclusive right granted for an invention may be product or process which gives new way of preparing and providing solution to a problem’. It protects novel inventions and manufacturing processes for duration of 20 years. It is a territorial protection and can be sold or licensed. Patent protection implies that inventions cannot be commercially made, used, distributed or sold without the patent owner’s consent. A patent owner has rights to decide who may or may not use the protected invention for the period in which the invention is protected. Patent provides incentive to the creator for his invention.

Filing of patent application to patent office is mandatory. A patent is granted by a national patent office or regional patent office on the basis of application. Every country has its own patent office and its own patent law for the protection of innovative ideas. Rights given by the patents are monopoly rights which prevent others from making, using or selling the creator’s invention for a specified period of time. Patents are issued for inventions which are solutions to specific problems in the field of technology. Invention may be related to a product or a process. In order to get a patent for an invention, the invention has to be patentable (Novel, non obvious, inventive step, utility
etc) and application must be filed in the patent office. In brief ‘Patents reward disclosure rather than secrecy’. Patent document is published as an application and later granted by the patent office as a patent. Patents are granted for the inventions related to process, products, apparatus and industrial applications.

3.4.2 Copyright:

Copyright (WIPO, http://www.wipo.int/about-ip/en/copyright.html; Granstrand, 1999) is a legal term describing rights given to creators for their literary and artistic works. The kind of work protected under copyright includes: Literary work like novels, poems, plays, reference works, newspapers, and computer programs; databases, films, musical compositions, choreography; artistic works like paintings, drawings, photographs, and sculpture; Architecture; maps; and technical writings etc. This form of IP protects softwares also. It protects the creative works for 60 years even after the death of creator and can be transferred, sold, or licensed. Due to copyright, the original creator of work is protected by copyright and their heirs also have some basic rights. They hold exclusive rights to use or authorize others to use the work on agreed terms. Creator of the work holding a copyright can prevent others from, production of his work in various forms, public performance, recordings, broadcasting, translation etc. Copyright gives two types of rights: the economic rights, which have a time limit i.e. 60 years after the creator’s death and moral rights which protect the claim of authorship of a work and protect harm to reputation of the creator. Moral rights are conferred by the Bern Convention. Copyright law protects form of expression of ideas, not the ideas themselves. Thus copyright is awarded to literary works, musical works and artistic works etc. Copyright protects the owner from copying his intellect by others. Creator has the rights to exclude others from using his work without authorization.

Copyright protects knowledge from adapting, performing or publishing copyrighted work. Copyright prevents reproduction of work, preparation of derivative work; distribute copies, public performance or display of work. The ‘fair use’ principle is used to protect work from the copyright infringement. It involves copying of certain part for educational use, research use, literary criticism, and satire. Almost everything that is
published, whether electronically or printed is copyrighted. In general, a work is copyrighted when it is created, and it is not necessary to apply for copyright claim.

3.4.3 Trademarks and Service Marks:

WIPO (http://www.wipo.int/trademarks/en/trademarks.html) defined trademarks as ‘It is a distinctive sign which identifies certain goods or services’. Trademark protects identity or brands of goods and services for 10 years and can be renewed for perpetuity. It can be sold or licensed. One has to apply for getting the trademarks at the national trademark office. Trademarks provide identity and origin of a product. Using marks has a traditional origin from US, Britain, India and China, which enables the craftsman to sell their products beyond their locality. The difference between use of marks in olden days and present days is that, marks have increasing economic significance in present days. The development of trademark law was based on the concept of ‘caveat Emptor’ which means ‘Buyers Beware’. Trademarks started to play an important role with the development of industrialization and have now become a key factor in the modern world of international trade and market oriented economics. They allow competing manufacturers and traders to offer consumers a variety of goods in the same category. Trademarks reward the manufacturer who produces high quality goods, and as a result they stimulate economic progress. In short trademark is defined as ‘Any sign that individualizes the goods of a given enterprise and distinguishes them from the goods of its competitors’. Trademarks normally cover different aspects. Each aspect is to be examined in its own value.

- Words: company name, surname, geographical names, or any other set of words, slogans etc
- Letters and numerals: either letter or numeral or even combination of both.
- Devices: fancy devices, drawings, symbols.
- Logotype labels.
- Colored marks, three dimensional signs, audible signs (sound marks).
Thus trademarks identify a unique source of goods or services with a protected name, symbol or combination. Marks are used to differentiate between goods and services. The suffix TM can be used to indicate that a word, phrase or image is a trademark.

### 3.4.4 Industrial Designs:

WIPO (http://www.wipo.int/designs/en/) defines Industrial designs as ‘Industrial designs are applied to a wide variety of products of industry’. The protection for protecting industrial designs is generally for a period of 5 years initially and could be extended up to 15 years, protected for a limited duration and cannot be renewed. These can be sold or licensed. The reason behind protecting industrial designs is to make the article attractive and decorative. Hence, they add commercial value to the design and product and its market value is increased. One has to apply for its protection and obtain the certificate. Shapes and ornamentation are covered in this property.

### 3.4.5 Geographical Indicators:

WIPO (http://www.wipo.int/geo_indications/en/) has defined the term as ‘a sign used on goods that have a specific geographical origin and passes qualities or reputation that are due to that place of origin’. Most commonly, a GI consists of name of the place of origin of goods. Agricultural products typically have qualities that derive from their place of production and are influenced by local factors like climate, soil etc e.g. Ratnagiri Hapoos Mangoes from India, Roquefort cheese from France, Tuscany Olive Oil from Italy, etc. GI is not limited to agricultural products but also highlight specific qualities of a product which are due to human factors that can be found in place of origin of the product like manufacturing skills and traditions. The place of origin may be a village, town, region, state or country. Few examples are watches from Switzerland (Swiss), Puneri Pagadi from Pune India, Footwear (Kolhapuri Chappal) from Kolhapur India etc. GI links the products to a specific origin. The difference between trademark and GI is given as: TM is a sign used by an enterprise to differentiate its goods from the others. It gives right to owner to exclude others from using the TM whereas GI indicates to the consumers that a product is produced in a particular place and has specific
characteristics that are due to the place of production. It can be used by all producers who make their products like basmati rice, Darjeeling tea, Madras paan are some of the popular names. The same products are also available in other names in market, but these names have specific origin. International protection is given by treaties like Paris Convention for protection of IP, Madrid Agreement for the repression of False or Descriptive Indications of source of goods, and The Lisbon Agreement.

3.4.6 Trade Secrets:

Trade secrets are proprietary secrets with no statute to regulate and grant protection and no time limit for its protection. This covers method of manufacture and business process proprietary to the company. The aim behind this is protection by virtue of secrecy. A trade secret can be any information that derives independent economic value from not being generally known or readily ascertainable. The things covered under trade secret are formula, pattern, compilation, program, device, method, technique, or a process. Trade secrets protect material that has not been disclosed. The protection is indefinite as long as the information is kept secret by the owner.

The above stated enumerations clearly indicate that among all the IP, most important Intellectual Property is Patents because of the following facts:

i. Patents provide economical benefits to the inventors in terms of royalty.

ii. Patent filings in any country promote industrial development.

iii. Patents help in developing Research and Development

iv. Patents are useful in technology transfer

3.5 Intellectual Property Rights:

Intellectual Property Rights relates to granting of monopoly rights to the creator for making, using, selling, distributing, exercising his invention or work etc. GATT provided IPR protection to all the types of IP. Industrial Property Law determines when and how a person can capitalize on a creation. IPR covers legal principles.
3.6 Patent Basics:

The research study exclusively deals with patents and its related aspects and hence some basic concepts related to patents are explained for better understanding (McLeland, 2002). The concepts are given in following paragraphs.

A patent is an agreement between an inventor and a country. The agreement permits the owner to exclude others from making, using or selling the claimed invention. Patent is a monopoly right to the exclusive use of an invention, granted to the inventor or his assignee. This right is granted only for a limited period called ‘term of Patent’. (During the term of patent, it must be kept alive by payment of renewal fees).

A patent is an exclusive right granted for an invention, which is a product or a process that provides a new way of doing something, or offers a new technical solution to a problem (WIPO, http://www.wipo.int/patentscope/en/patents/). Patents give legal recognition to the owners of new inventions, providing them with the authority to stop others benefiting from their intellectual and financial investment. In fact, patent is an exclusive right for using an invention or innovation within a fixed period (usually 20 years). In exchange for this right, patents are published to share the knowledge with everyone so that new markets and technologies can evolve. A few facts about patent are stated below:

- A patent is an exclusive right, granted by a government, to an inventor in exchange for the inventor disclosing his invention to society.
- A patent may be defined as ‘a grant by the state of exclusive rights for a limited time in respect of a new and useful invention’. (These rights are generally limited to territory of the state granting the patent, so that an inventor wishing protection in a number of countries must obtain separate patents in all of them.)
- Patent rights are limited and considered as the sole rights for excluding others from making, using and selling the invention. (Since, government gives the rights; they are effective only in the area controlled by that government.)
- If the inventor desires protection in any other countries, he must apply for a patent in each of those countries as well. (to minimize the costs of filings in each
country, the Patent Cooperation Treaty (PCT) provides for the filing of an ‘international’ patent application by the inventor to his national patent office in order to obtain protection in selected countries, which are the members of the treaty)

- The patent, in law, is a property right and it can be given away, inherited, sold, licensed and even can be abandoned.
- There is no world patent but only world application.
- Patents are unique sources of information, and failure to include them in literature search can cost an organization heavily.

EPO defined patent as ‘A patent is a legal title granting its holder the exclusive rights to make use of an invention for a limited area and time by stopping others from, among other things, making, using, or selling it without authorization’. (http://www.epo.org/).

It should be borne in mind that a patent is a negative right. A patent only provides the right to take legal action for infringement. It does not check for such infringement - it is up to the patent owner to ensure there are no infringements of the right.

In general, patent is a right granted by the government to an inventor due to which, inventor gets right to exclude others from making, selling, using or importing invention for sale (the invention claimed in the patent deed) for a certain fixed period, provided maintenance fees are paid. Currently there are 198 patent offices worldwide. Patents are the most important intellectual property in industrial technology domain. There are over 32 million patents published worldwide and over half a million applications are added every year. Around 25000 patents are published per week in the world of which 50% are new. This bewildering picture presents a tough challenge for the future development of research in all the countries.

3.6.1 Nature of Patents:

Granstrands (1999) presents typical nature of patents as economical and technological products of the human intellect.
1) Patent is a legal right with a possible economic value. A patent does not directly allow the holder to exclusively sell or even manufacture the invention. It is a negative right, a right to exclude others.

2) Patent can be seen as a socio-economic contract between an inventor (IPR holder) and society.

3) Patent rights are important as competitive means for the protection and commercial exploitation of new technologies.

4) Patent information is important as means for technology and competitor intelligence.

5) Patent rights are national in the sense that they refer only to the country that granted them and they must be applied for, in each country of interest.

6) There is no world patent or international patent.

7) A patent right is violated or infringed if someone exploits the invention commercially.

8) Patents are territorial e.g. an Indian patent has no force in other countries as well as patents filed in other countries use no force in India.

9) Patentable subject matter covered in patent gives new concepts, inventive step and has industrial applications.

3.6.2 Benefits of Patents

By and large, it is observed over a period of time that patents provide the following benefits:

- Provide a monopoly right to the exclusive use of an invention.
- Provide the owner with a right to take legal action to prevent other people exploiting the invention – i.e. it is a negative right and requires active policing to ensure protection.
- Overseas protection is through international conventions like European Community, Patent Co-operation Treaty.

In addition there are some other points regarding patents to take note of:
- It is not possible to guarantee that a patent is valid even when granted. It is always open to challenge.
- A patent places the invention in public domain. So it may not be a preferred business option. Secrecy may be more lucrative
- Access to patent information can give interesting insights into the activities of competitors etc.

3.6.3 Need for Patents:

It is clearly realized that in recent days, intensity and complexity of technology competition has lead to emergence of new ways of extracting information required for better decision-making in different organizational levels. Following are the factors that indicate the need of patents in research areas:

- Patents are excellent source of technical and legal information.
- More than 80% of information in patents is not published elsewhere.
- Rewards to inventors for invention by granting protection
- If patents are commercially exploited, substantial benefits to the inventors or their assignees are gained.
- Patents give enforceable exclusive legal rights to the inventors for a limited period of time to reap monetary benefits out of the invention.
- The rights awarded to the inventors are enforceable against anybody within the jurisdiction of the Government.
- Patents play an important role in development of technology by helping in planning research and excluding the chances of repetitions.
- Patents play an important role in transfer of technology, which in turn results in economic growth.
- Patents are used to identify experts in a particular area.
- Patents are used to find out which companies are working in a particular area.
3.6.4 Possible Beneficiaries of Patents

- Researchers.
- Industries.
- Business organizations.
- Consultants and planners.
- Patent attorneys and agents.
- Society.

A researcher (from R & D, S & T organizations, universities and the industries) makes use of patents:

- To avoid duplication of research.
- To assess the state of the art before initiating a research project.
- To find ready solutions to technical problems in an ongoing research.
- To be updated with developments in the technology field.

Industries rely on the patents:

- To improve existing technology to produce newer, better and cheaper products.
- To find ready solutions to technological problems.
- To increase production and productivity.
- To identify suitable technologies for transfer.
- To evaluate alternative technologies.

Business organizations need to refer patents:

- To identify new products for marketing, licensing and distribution.
- To locate patent owner.
- To identify competitors.
- To avoid infringement problems.
- To locate areas of investment.

Consultants and planners require patents:

- To assess a technology for viability.
• Technology forecasting by identifying trend of inventions.
• To advise industry on issues relating to the technology.
• To find out future technologies.
• To predict technological trends.

Patent attorneys and agents make use of patents:
• To ascertain patentability, application of patent and opposition.
• Revocation under the patent law.
• Patent drafting.

Society largely benefits to gain:
• Newer, better, cheaper products available to the society.
• After expiry of the term of patent, the invention is available to public without any legal problem.

3.6.5 Special Features of Patent Information
Increase in patent filings and volume of patents, the effective retrieval and analysis of patent information has become an essential skill in business and R & D areas. These features are covered by WIPO (http://www.wipo.int/patentscope/en/patents) and Bagheri (2004) which are as follows:

1. Broadness: Worldwide, well over 30 million patents have been published to date and millions are currently in force. Some patents contain well over 200 pages of technical information. In special areas of technology, like genetic sequences, there are now documents running to thousands of pages.


2. Only source: Patent documents contain information that is not divulged in any other form of literature. A study in the US Patent and Trademark Office shows that as much as 80% of the technologies disclosed in the US patent documents are reportedly not disclosed in non-patent literature (Bagheri, 2004).

3. Detailed description: The text of a patent document has to contain a full and practical description of the invention, clear enough to enable an expert in that field to

4. **Uniform structure**: Patent documents have a fairly uniform structure. The uniform structure of patent documents makes their reading, as one gets accustomed to it, generally easier, which is not the case with published articles where the reader has to familiarize himself with the style and mental process which differs from author to author. (WIPO, http://www.wipo.int/patentscope/en/patents).

5. **Concise information**: Technical information in patent documents is very brief and useful. Unlike other sources that their main notes are scattered among rather redundant statements, patent documents are well handy to find the information required. (WIPO, http://www.wipo.int/patentscope/en/patents).

6. **Easy access**: Full text of many patent documents is easily accessible via internet. This is an important advantage of patent information over other sources of technical information. (Bagheri, 2004)

7. **Low cost**: Full and free access to many published patent documents is easily possible through Internet (Bagheri, 2004).

8. **Standard classification**: The International Patent Classification (IPC) has been established by Inter-Governmental Agreement and is now applicable by at least 50 patent offices. The IPC subdivides technology into 8 sections, 120 classes, 628 subclasses and more than 96000 fields called ‘groups’ or ‘subgroups’. Each group is described in a few words and identified by a ‘Classification Symbol’ consisting of numbers and letters (Bagheri, 2004).

9. **Several searching approaches**: There are several possible approaches for searching and retrieving patent information, including different searches by using (i) filing or publication number, (ii) references found in a patent document, (iii) the bibliographic data, (iv) the International Patent Classification, (v) well chosen keywords, and (vi) combination of the mentioned strategies. Given the immense amount of patents’ information, the best and most precise way for gaining required information is through IPC-based searches (Bagheri, 2004).
3.6.6 Patentability Requirements:

In patents, the subject matter that can be protected by patents is more important. These subjects are called as ‘Patentable’ subject matter. The prerequisites for patent filing are: (Ganguli, 1998; Pressman, 2004)

- **Novelty:** Novelty is newness, and while filing patent, the subject matter covered in it must satisfy the condition of newness in it, and should also not be known in the public domain. Public domain refers to all things that are available and accessible to the public. The invention must never have been made public in any way, anywhere in the world before the date of the application being filed (the ‘Priority Date’).

- **Utility:** Utility means the material to be patented should have commercial use or application. Utility is easily resolved in inventions involved in areas of science. A patent can only be granted if the invention is capable of being made or used in some kind of industry. This means it must take the practical form of an apparatus, a device or a product, or be an industrial process or method of operation.

- **Non obviousness:** It means that the invention for which patent protection is sought is just an obvious development for people skilled in the art, and then patent protection is not provided. Non-obvious to someone familiar in a similar field - must involve an inventive step, but this may be small, or may appear obvious to you, but not to everyone.

- **Inventive step:** an intermediary step developed which increases the productivity of the process.

3.6.7 Prerequisites for Patenting:

A technical invention fulfilling minimal requirements in respect of the following criteria is considered for the patentability.

1) It is novel to the world.
2) It is industrially applicable or useful.
3) It is non-obvious to the ‘average person skilled in the art’ (professional practitioners).
4) The invention must exceed a certain minimum inventive step.

The minimum level of patentability requirements may vary across nations as well across the patent examiners.

Pressman (2004) suggested four legal requirements for obtaining a utility patent:

1) Statutory Class: The invention should fit into one of the five classes viz. process (method), machine, article of manufacture, composition or a new use.
2) Utility: The invention must properly be regarded as a useful one.
3) Novelty: The invention must properly be regarded as novel.
4) Un-obviousness: The invention must be properly regarded as unobvious from the standpoint of someone who has ordinary skills in the specific technology involved in the invention (provide one or more new and unexpected results).

As per Indian Patent Act 1970, art, processes, methods or manner of manufacture, machine, apparatus, can be patented.

**3.6.8 Non-patentable aspects:**
These are certain aspects which are excluded from patenting and these are enumerated as follows:

- Discoveries.
- Scientific theory.
- Mathematical model.
- Aesthetic creation.
- Computer programs - may be protected by copyright and may be patentable in certain specific instances and in few countries.
- Encouraging offensive, immoral or antisocial behaviour.
- Medical procedure or method for diagnosis.
• Variety of animal, plant or biological processes. (Some plant varieties can be protected in certain circumstances).
• Anything contrary to law or morality or injurious to public health.
• Rearrangement or duplication of the devices.
• Method of agriculture or horticulture.
• Inventions related to atomic energy.
• Computer software (Now patenting is allowed)

3.7 Types of Patents:
Thorough glance at the patents literature reveals that there are three types of patents covered (Pressman, 2004; http://www.patentlawportal.com/directory/patent-types).

1) Utility Patents
2) Design Patents
3) Plant patents

1) Utility Patents: This is a main type of patent and covers inventions that function in a unique manner to produce utilitarian results e.g. new drugs, manufacturing process, new bacteria that can be made by humans. To get utility patent, one has to file a patent application disclosing the invention to public, indicating how to make and use the invention. It has a 20 years patent term from the date of filing.

2) Design Patents: A design patent covers unique, ornamental, visible shape, surface ornament, an article or object e.g. a lamp, a building, a computer case which has a truly unique shape. It has a 14 years patent term from the date of issuance.

3) Plant Patents: A plant patent covers asexually reproducible plants (Using grafts and cuttings) like flowers. Sexually reproducible plants (use pollination) can be monopolized under the plant variety Protection Act. Both sexually and asexually reproducible plants can now also be monopolized by utility patent. . It has a 20 years patent term from the date of filing.
Machulp (1968) described that patents are public documents (open to all) confirming certain rights and privileges. The word patent is derived from the Latin word ‘Litterae Patentes’ i.e. ‘Open Letters’. The expression was called ‘Letters Patent’ and is still used in legal parlance. The meaning attached to patent is ‘The grant of an exclusive right to the use of a technical invention’. Srivastava (1970) described patent as an individual document representing agreement between a national Govt. and the inventor or assignee. In return for disclosing his invention for the benefit of public, the inventor is granted the right to exclude others from making, using, or selling the invention for a definite period. All countries, in which scientific research is conducted, have its patent system to liberate an inventor’s idea, which can be used for benefit of community. It was stated that patents belongs to the literature of science, technology and law. Hence patent literature has got different treatment in science and technology. (Terapane, 1978).

3.8 Structure of Patent Document:

Generally speaking the design of patent document consists of following components: (Ganguli, 1998).

1) **Cover Page of the Patent Document**: This page describes the standard set of data indicating all the bibliographic Information covering patent application and patent granted number, date of application and grant, priority data, title, inventor or assignee, IPC data, etc. Other details like references cited by examiner, patent attorney, patent examiner, facts about examination process and abstract, drawings and illustrations are also covered.

2) **The Specification**: it gives a detailed description of the invention. The problem statement, summary of the invention and disclosure, etc. are covered.

3) **Examples**: They explain the actual working examples.

4) **Claims**: This is the main part of patent. It gives one or more claims stating legal description of exclusive right granted to the inventor.
It is commonly understood that any individual or group of individuals can apply for a patent and in most countries a legal entity is a company called as assignee. Normally an employee in industry assigns the rights for an invention to the employer. It is then responsibility of the company to apply for a patent and to turn the invention into innovation in the form of marketable product or process.

Pressman (2004) has stated that anyone can apply for getting a patent provided the conditions for the filing of patents are fulfilled regardless of age, nationality, mental competency, incarnation or any other characteristics, so long as he or she is a true inventor of the invention. Even deceased or insane people may apply through their representatives. Every inventor needs to apply for getting the accord for patent from the concerned authority. There are several benefits to the inventor, firms (assignee) from applying for patent protection.

- Deter a competitor from introducing technologically similar invention.
- Put a pressure on a competitor who has introduced a technologically similar invention to withdraw from the market.
- Block competitors from patenting in similar areas.
- Create an identifiable asset with certain rights for negotiations, regarding financing, licensing, etc.
- Create an incentive to invent among the staff of the firm.
- Create possibility of stimulating and measuring R and D productivity.
- Gain easy access to the information pertaining to patent application since it is publicly available
- Find business negotiations with patent holder for financing, licensing etc.

There is a specified time and notice followed to apply for patent to the concerned. Granstrand (1999) pointed out that the timing of a patent application in innovation process is also a matter of importance. It is better to apply at the early process to get the benefits like

- It reduces the risk of being blocked by others
- It provides for earlier revenue stemming from the patent
- There are good chances for getting the patent granted as well as covering a broader scope of protection in the emerging technology.
- Deter others from following the same approach of the R & D invention

Though there are advantages of early filing of patent applications, there are also disadvantages like

- It provides a shorter protection time for the product/process in the market.
- It gives early indication to the competitors of the organization’s R & D activities
- It also increases the risk of not securing a patent due to insufficient experimental data for the invention

Application for patent may be in house or in other countries where inventor wants the claim of research work. The basic concept behind filing the patent is to get legal protection for the inventor for his innovation; hence it is necessary to apply in those countries where the inventor or assignee has a business or expects to have a business within the lifetime of the patent. Similarly there is also a practice to file the first patent application for a particular invention (basic priority application) in the home country of the inventor or the assignee.

In order to enable the inventor to apply, there are many guidelines available for applying for patents like WIPO’s PCT Applicant’s Guide. Similarly all the patent offices have their guiding booklets giving details as well as forms required for application purpose.

The overall process involved in getting patent granted is as follows:

- Reading and scanning/evaluating patent literature
- Development of new idea, innovative idea
- Experimentation
- Invention
- Search for prior art
- Establish novelty
• Filing patent application (national route, PCT, EPO, ARIPO etc)
• Assigning application number
• Examination by the patent office for novelty, non obviousness and utility
• Granting the patent
• Announcement in patent journals and secondary sources
• Licensing of patents

There are some points where patents can also be rejected by the concerned authority. As Pressman (2004) has pointed out the reasons for losing the rights of the patents and few of them are:

- Maintenance fees is not paid
- When identified that the patent disclosure fails to teach how to make and use the invention.
- Improperly described invention or if the claims are legally inadequate
- One or more prior art references are uncovered and indicates that the invention reported in the patent is not new

3.9 Patent Classification Systems in Practice:

Patents cover the diversified aspects of a subject field; therefore it is necessary to classify the same to enable the easy access and identification. Attempts to prevent drowning in the flood of patent literature by designing a classification system started over 100 years ago. The growth of the files of patent specifications led the patent offices to develop classifications of their own. (WIPO, http://www.wipo.int/classifications/en/)

The primary purpose of classification systems is to facilitate the searching and retrieving of patent documents by patent offices and other users. Various classification systems exist and most have been designed so that each technical aspect of an invention, to which a patent document relates, can be classified as a whole. A patent
document may contain several technical aspects of an invention, and therefore be allocated several classification symbols.

There are few countries using their own classification systems but few of them are popularly used everywhere including the searching of the databases for gathering the information. Patent classification has got importance in the patent system. The main systems used universally are International Patent Classification (IPC), and few others are US Patent Classification and Indian Patent Classification. The major patent classification systems are briefly defined below:

3.9.1 International Patent Classification (IPC):

The International Patent Classification (IPC), established by Strasbourg Agreement 1971, provides for a hierarchical system of language independent symbols for classification of patents and utility models according to different areas of technology to which they pertain. Many patent authorities, used to classify and index the subjects of the published patent literature, currently use the IPC system. IPC is published and monitored by WIPO and was first published in 1968. It is a sole international classification system used by Canada, European Patent Office (EPO) and 80 other countries including US (US use the IPC code to classify patents as secondary code along with US Classification Code as primary code). IPC is highly application-oriented system due to multiplicity of application-type places in the schedules. The current version of IPC (7th) divides technology into 8 main sections, 118 Classes, 624 Subclasses and over 67,000 subgroups. The versions of IPC are amended in every five years by an international committee of experts. The classification system of the IPC is available open source on Internet, (http://www.wipo.int/classification/fulltext/new_ipc/index.htm) and on CD-Rom as well as hard copy on payment. IPC is used for searching of databases and hence this is a very important access point to the searcher.

For the first seven editions of IPC, the classification was updated approximately every five years. From the eighth edition, which came into force on January 1, 2006, the
classification has been divided into ‘core’ and ‘advanced’ levels. The core level is to be updated on a three-yearly basis. The advanced level provides more detailed classification and is updated more frequently (probably every three months) to suit the new subject coverage. At present 2009 edition is available on the internet. The detailed classification code is available on internet on the following links

http://www.wipo.int/classifications/ipc/en/
http://www.wipo.int/classifications/ipc/ipc8/?lang=en

In the IPC system, the knowledge i.e. intellectual technology is divided into 8 key or main areas. They are as under: (http://www.wipo.int/classifications/en/)

A: Human Necessities
B: Performing Operations, Transport etc
C: Chemistry, Metallurgy etc
D: Textile and Paper Technology
E: Fixed Constructions
F: Mechanical Engineering and Lighting
G: Physics, Heating, Weapons
H: Electricity

Among these main sections, the subjects are again divided into subgroups; this method helps to classify the research disclosure into proper technological or research area in deep or minute level. Each classification term consists of a symbol such as A01B 1/00 (which represents the subject ‘hand tools’). The first letter is the ‘section symbol’ consisting of a letter from A (‘Human Necessities’) to H (‘Electricity’). This is followed by a two digit number to give a ‘class symbol’ (A01 represents ‘Agriculture; forestry; animal husbandry; trapping; fishing’). The final letter makes up the ‘subclass’ (A01B represents ‘Soil working in agriculture or forestry; parts, details, or accessories of agricultural machines or implements, in general’). The subclass is then followed by a 1 to 3 digit ‘group’ number, an oblique stroke and a number of at least two digits representing a ‘main group’ or ‘subgroup’. A patent examiner assigns a classification to
patent application or other document at most detailed level which is applicable to its contents.

**Complete Classification Symbol**

A complete classification symbol comprises the combined symbols representing the section, class, subclass and main group or subgroup.

<table>
<thead>
<tr>
<th>Example: A</th>
<th>01</th>
<th>B</th>
<th>33/00</th>
<th>Main group – 4th level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section – 1st level</td>
<td>or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class – 2nd level</td>
<td>33/08</td>
<td>Subgroup – lower level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subclass – 3rd level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.9.2 European Patent Classification (ECLA):

The European Patent Office (EPO) uses ECLA for its internal collection of search documentation (EPO, http://en.wikipedia.org/wiki/European_Classification). The ECLA classification system is an extension of the International Patent Classification system. It contains 135600 subdivisions, i.e. about 66000 more than IPC, and is therefore more precise. It is also more homogeneous, detailed and more systematic like International Patent Classification (IPC). ECLA classifications are assigned to patent documents by EPO examiners in order to facilitate prior-art searches. ECLA is revised continuously and the corresponding documentation is reclassified. The ECLA classification symbol is made up of a letter denoting an existing IPC class, followed by a number (two digits) denoting the IPC section level (e.g. B65). Optionally, the classification can be followed by a sequence of a letter (e.g. B65D) denoting the IPC subclass level, a number (variable, 1-3 digits, e.g. B65D81) denoting the IPC group level, a forward slash "/" and a number (variable, 1-3 digits, e.g. B65D81/32) denoting
the IPC subgroup or full classification. Optionally, the classification can be followed by an ECLA subgroup represented by a letter, which can also be followed by a digit, and a letter (e.g. B65D81/00B1B or A23B4/005F4).

This classification system is used to classify patents on Esp@cenet and search the information on the Esp@cenet database by adding the term in EC classification field. Around 28 million documents can be searched in esp@cenet® using ECLA symbols, sometimes dating back to 1836 depending on the country of origin. The ECLA is available online as well in hard copy. The system is available at http://12.espacenet.com/espacenet/ecla/index/index.htm, http://en.wikipedia.org/wiki/European_Classification

3.9.3 United States Patent Classification (USPC):

USPC is a national classification system managed by U S Patent and Trademark Office. International importance is given by U S Patent System and has many similarities with Canadian Patent Classification System (CPC). It is the best system to search US patents.

The USPTO examiners use US classification system as a primary classification tool. The system is used for subject search of US patents dating back to 1790. The US classification is only applied to US patent specifications and cannot be used to conduct an international search. The system is used to search on the databases, which are dedicated to US patents and some free searches on the Internet. The manual is available online as well as in print form.

The system consists of 3 main categories chemicals, electricals and mechanicals and form about 400 classes which are divided into 125000 individual subclasses (www.uspto.gov/web/patent/classification/). There are over 400 classes in the U.S. Patent Classification System, each having a title descriptive of its subject matter and each being identified by a class number. Each class is subdivided into a number of subclasses. Each subclass bears a descriptive title and is identified by a subclass number. The subclass number may be an integral number or may contain a decimal portion and/or alpha characters. A complete identification of a subclass requires both
the class and subclass number and any alpha or decimal designations; e.g., 417/161.1A identifies Class 417, Subclass 161.1A. The USPC is available on the net at http://www.uspto.gov/classification/

3.9.4 Indian Patent Classification:

Indian Patent Classification is used in patent offices for internal use of patent officials. It is not available on internet (only printed form is available in the patent offices). This is used for classifying the patents published by the Indian Patent Office.

3.9.5 DWPI Classification System:

DWPI (http://science.thomsonreuters.com) categorizes patent documents using a simple classification system for all technologies. This unique classification is consistently applied to all patents by Thomson Scientific subject experts, enabling effective and precise searching in a particular area of technology. Patents are divided into three broad areas: chemical, engineering, and electronic and electrical engineering. Each of these is then further divided into sections and classes which describe the technical area, or areas, covered by the patent.

Patents are divided into 21 broad subject areas or sections. These are designated A-M (Chemical); P-Q (Engineering); and S-X (Electronic and Electrical). These sections are then further subdivided into classes. Each class consists of the section letter, followed by two digits. For example X22 is the class designation for automotive electrics and C04 is the class for all chemical fertilizers.

When used in combination with other online search terms e.g. a keyword search, these classes allow you to precisely and effectively restrict your search to the relevant subject area. For example, the otherwise ambiguous word “WARN” can be combined with X22 (Automotive Electrics) to retrieve only those references to automotive warning devices. DWPI cross-classifies entries to ensure that all patents of interest are retrieved when searching.

Companies often use different names for same invention, and additional variation may be introduced when patent application is translated into different languages. Also some
keywords can appear in many different contexts within patent titles. For example the word "valve" can be either mechanical or electrical. So a subject classification system is essential for effective patent searching. The classification index is available online.

3.9.6 Canadian Patent Classification (CPC):

Canadian Patent system is based on US Patent classification and developed by Canadian Intellectual Property Office (CIPO) (www.cipo.org), this system slightly differs from IPC in terms of its function. The technology is separated into 3 main “art” categories viz. Chemical, Electrical and Mechanical arts forming 340 classification schedules and 37,000 subclasses. Before 1978 only CPC appeared on Canadian Patent Documents, between 1978 and Oct 1989 both CPC and IPC were printed on the documents, after October 1989 only IPC appearing exclusively. It is now obsolete and not maintained.

3.9.7 Chemical Abstract Service (CAS):

The CAS with its many chemistry specific databases also has its chemistry specific classification system. Every publication, patent document or scientific literature is assigned CAS registry numbers identifying the specific substance or compound. This is also very unique to search the chemistry related literature. (www.cas.org)(http://www.cas.org/expertise/cascontent/registry/regsys.html). A serious examination of classification systems reveals that only IPC is very popularly used in most of databases for accessing patent information. However, EPO and USPTO systems are more used in US and European countries.

3.10 International Treaties, Convections and Organizations Related to IPR:

There are some organizations which have contributed global efforts to promote IPR in an objective way. Some of them are briefly mentioned here.

3.10.1 Paris Convention:

The Paris Convention was drafted in 1880 and came into effect in 1884. USA adapted it in 1887. Prior to the Paris Convention, inventors had to submit patent applications simultaneously in all countries where protection was desired. Due to increase in
international trade it was felt that protection only at national level leads to usage of technology in other countries. Paris Convention covers industrial properties like, patents, trademarks, industrial designs. Paris Convention is revised and kept up-to-date and in force in 144 member states. To overcome the problem of reciprocity, countries resorted to the members of Paris Convention decided to abide by a new concept called national treatment. Under national treatment, a foreign applicant is treated ‘no less favorably’ than a domestic applicant. (http://en.wikipedia.org/wiki/Paris_Convention_for_the_Protection_of_Industrial_Property).

3.10.2 Patent Co-operation Treaty (PCT):

The PCT is administered by WIPO and is one step towards harmonization. The purpose of PCT is co-operation in the filing, searching and examination of applications for protection of inventions and for rendering special technical services. PCT procedure consist of patent filing procedures and some aspects of patent examination procedure in the form of mandatory PCT search and an optional preliminary PCT Examination called International Phase. The PCT Search and PCT Examination is performed by an International Search Authority (ISA) and International Preliminary Examination Authority (IPEA).

3.10.3 General Agreement on Trade and Tariff (GATT):

GATT traces its origins to 1944. In 1944, delegates of US and UK proposed a comprehensive economic and financial plan for post World War II reconstruction and development. The result was establishment of three international economic and financial institutes: World Bank, International Monitory Fund (IMF) and International Trade Organization (ITO). GATT was to serve as an interim agreement. In 1948, national representative provisionally approved GATT to expedite international negotiations on tariff reductions. Uruguay Round agreements established WTO.
3.10.4 World Trade Organization (WTO):

WTO is an international organization designed to supervise and liberalize international trade. WTO was established on 1st January 1995, and is the successor of the General Agreement on Tariffs and Trade (GATT) which was established in 1947 and continued to operate for almost five decades as a de facto international organization. WTO deals with the rules for negotiating and implementing new trade agreement, and is in charge of policing member countries adherence to all the WTO agreement, signed by majority of the world’s trading nations and ratified in their parliaments. WTO focuses on the issues like previous trade negotiations, especially from the Uruguay Round. The organization is currently working with its members on a new trade negotiation called the Doha Development Agenda (Doha Round) launched in 2001.

3.10.5 World Intellectual Property Organization (WIPO):

In 1893, Paris Convention and Bern Convention established bureaus for proper administration and these two bureaus merged together to form United International Bureau for the Protection of Intellectual Property Known as BIRPI. BIRPI was the predecessor of World Intellectual Property (WIPO) established in 1970. The goal of WIPO is to harmonize IPR. WIPO became an agency of United Nations and today it administers 21 treaties including Paris Convention. WIPO also administers PCT. WIPO expanded its role in the management of globalized trade in 1996 by entering into cooperation agreement with WTO.

3.11 Development of Patent System:

The concept of invention developed slowly with granting of franchises in Ancient Greece. The specific system of patents and copyright monopolies was fixed in Venice, Italy during 15th Century. In 1474, Republic of Venice recognized the right of an inventor to get exclusive rights for his invention and from then onwards patents were issued in Venice. Maynard (1978) pointed out that Galileo Galilei was one of the Venetian patent recipients in 1594 for a period of 20 years for his invention ‘Mechanism for raising irrigation water to fields. Prager (1952) also reported that the similar procedure was followed later in Germany, France, England and Netherlands
between 1484 and 1550. Boehm (1967) indicated that the development of patent system in England was established during the reign of Queen Elizabeth I (1958 to 1603) and ‘Patent Monopolies for Inventions’ were granted for the first time. In 1624 ‘statute of Monopolies’ was adopted by British Parliament. Later British patent law was established and this law was the basis for patent laws of all the countries of world.

Patents link to various aspects like innovation (new developments or improved products, process etc), inventions (new solutions to technical problem) and market place, which fulfill novelty, inventiveness and industrial use or applicability. Filings of patents makes the invention known to public all over by disclosing the contents and also gets the protection by procedure for certain period (20 years from the date of filing application). Patents can be filed in any area provided it must satisfy novelty, non obviousness and utility, which are the essential characteristics of patent filing. Every country has a patent office and has a well set patent system called Patent Law. Patent Law helps in filing patents.

In conclusion, this chapter emphasizes the basic awareness of patents and patent related aspects. Looking at the rapid proliferation of innovations in chemistry & chemical technology and allied subject fields, researchers and inventors need to know the significance of IPR and related aspects from the very elementary level. A modest attempt is made here to present the essential aspects in a brief manner.

References:


