UTILITY MODEL –A TOOL FOR ECONOMIC AND TECHNOLOGICAL DEVELOPMENT: A CASE STUDY OF JAPAN

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Submitted By

Dr.K.S.Kardam
Assistant Controller of Patents and Designs
Indian Patent Office, New Delhi
INDIA

Under the Supervision of
Professor Yoshitoshi Tanaka,
Tokyo Institute of Technology, Tokyo
JAPAN

Note- The views expressed in this report are purely of the author, except where the references are cited. The views need not necessarily reflect the official view of the office; the author is working for or the agency that has sponsored the fellowship.

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Utility model –A tool for economic and technological development: A case study of Japan

Abstract

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

ABBREVIATIONS

ACIP : Advisory Council of Intellectual Property
ARIPO :African Regional Industrial Property Organization
ASSOCHAM : The Associated Chambers of Commerce and Industry of India
CII : Confederation of Indian Industry
CSIR : Council of Scientific and Industrial Research
DRDO: Defence Research and Development Organisation
EPC : European Patent Convention
EPO : European Patent Office
EU : European Union
FDI : Foreign Direct Investment
FICCI : Federation of India Chambers of Commerce and Industry
FTC : Foreign Technology Collaboration
GDP : Gross Domestic Production
GERD : Gross Expenditure on Research and Development
GNE: Gross National Expenditures
IPAC: Industrial Property Advisory Council
IPR : Intellectual Property Rights
IPRIA : Intellectual Property Research Institute of Australia
JIPA : Japan Intellectual Property Association
JPO : Japan Patent Office
KIPO: Korean Intellectual Property Office
MNCs : Multi National Corporations
NRDC:, National Research and Development Cooperation
OAPI: African Intellectual Property Organisation
PCT : Patent Cooperation Treaty
PPP: Purchasing Power Parity
ROK : Republic Of Korea
SIPO : State Intellectual Property Office
SMMEs : Small, Medium and Micro Enterprises
SSI : Small Scale Industry
TIFAC: Technology Information Forecast and Assessment Council
TKDL : Traditional Knowledge Digital Library
TLO : Technology Licensing Organizations
TRIPS : Trade Related Aspects of Intellectual Property Rights
UGC : University Grant Commission
WIPO: World Intellectual Property Organization
WTO : World Trade Organization

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CHAPTER-I

INTRODUCTION

1.1 BACKGROUND

1.1.1 What is Utility Model: Now days all of us are living in a highly and globally competitive information and knowledge based economic world. Intellectual property being knowledge based creations therefore has been considered and well recognized as a tool for technological and economic development. The successful development and exploitation of intellectual property rights can contribute to the economic and technological development but until now unfortunately this has been successfully exploited by developed countries only, mainly perhaps due to their economic power. Today by advent of WTO and TRIPS, not only developed countries but developing as well as least developing countries are bound to follow the regulations of this new international regime and accordingly they need to amend their intellectual property laws and also open their markets to provide global window for the trading system. Generally, the technical creations such as inventions are protected under patent legislations in the form of patent provided such inventions meet the patenting criteria such as novelty, inventive step and industrial applicability. However, the features relating to outer shape of innovated products are also protected under industrial design legislation as new and original industrial design applied to the product. Although not widespread, some petty technical creations are also protected as utility models in addition to patents in very few countries. They are also known as innovation patents or utility innovations in some countries like Australia and Malaysia. However, some countries like Hong Kong, Ireland and Slovenia have a short-term patent that is equivalent to patent.[1] This system is perhaps designed to complement the patent system where the inventions relating to such petty technical creations are not given proper consideration under the patent law, nevertheless such inventions need to be protected and promoted actively from industrial point of view. The term ‘Utility Model’ simply refers a

[1] Understanding Industrial Property, WIPO publication No 859(E),pp-8.

name coined to a title of protection for certain inventions, such as devices, articles or other engineering products. They are generally protected for the inventions which are technically less complex and have short commercial life in order to fostering local innovations. However country like Germany has same requirements for utility model as of patent but excluding certain inventions such as processes and biotechnological inventions including discoveries, scientific theories and aesthetic creations. According to German law, utility model protection shall be afforded to inventions that are new, involve an inventive step and are susceptible of industrial application. [2] Similarly in Australia, the requirement for the protection under Innovation Patent law for innovation patent is the same as for standard patents. It means that the innovation must be new and involve a "innovative step". The test for "innovative step" is that the difference between the claimed invention and the prior art base must make a "substantial contribution" to the working of the claimed invention. Whereas Japanese, utility law encourages devices by promoting the protection and utilization of devices relating to shape or construction of articles or a combination of articles, so as to contribute to the development of industry[3].The device is defined as the creation of technical ideas by which a law of nature is utilized.[4] Accordingly in Japan any person who has made a device which is industrially applicable and which relates to the shape or construction of articles or combination of articles may obtain a utility model registration therefor subject to certain conditions. Therefore as a whole, the requirements for registrations of utility models are less stringent than patents and protection is sought for the innovations of incremental nature for shorter period. The registration is also affected within very short time. The requirements for registration are more or less same or rather similar in all countries but each country has provided its own definition to utility models or innovation patents suiting to their industrial development. This system is said to be good for SMEs sector, as it is cost effective, quick for registration in order to protect incremental and improvement inventions. At present, there are about 46 countries and 2 Inter-Governmental Organisations, which have utility model protection system. They are namely, Australia, Argentina,

[2] Section 1(1) of GermanUtility Model Law
[3] Section 1of Japanese Utility Model law
[4] Section 2(1)

Armenia, Austria, ARIPO, Belarus, Belgium, Brazil, Bulgaria, China, Colombia, Costa Rica, Czech Republic, Denmark, Estonia, Ethiopia, Finland, France, Georgia, Germany, Greece, Guatemala, Hungary, Ireland, Italy, Japan, Kazakhstan, Kenya, Kyrgyzstan, Malaysia, Mexico, Netherlands, OAPI, Peru, Philippines, Poland, Portugal, Republic of Korea, Republic of Moldova, Russian Federation, Slovakia, Spain, Tajikistan, Trinidad & Tobago, Turkey, Ukraine, Uruguay and Uzbekistan[5]. However, according to another research study conducted in 2004 by a Japanese researcher, there are about 130 countries who have introduced the utility model system as a system to supplement the patent law[6].The utility models are considered generally good for the developing countries for following reasons, namely, (a) they enable the artisans. To secure protection for innovations the strict novelty and inventive step requirement of patent law.(b) they increase the role of small scale innovators and artisans in economic development and help them to stay in the business in the face of new technology,(c)they act as a spur to enhanced levels of innovation,(d)they are cheaper to acquire than patent and finally they become a source of data on innovative activity and experience in technological management.[7]

1.1.2 International development in IP-Utility Model System: The importance of protection of intellectual property, particularly the industrial property was first recognized in the Paris Convention for the protection of Industrial Property, which was established more than 120 years ago in 1883 and revised many times since then but lastly amended on September 28, 1979, provides for the protection of utility models. This is one of the first important international treaties for the promotion and protection of industrial property by the nationals of contracting member countries in other member countries. At present, there are about more than 170 members to this convention. India joined the Paris Convention on December 8, 1998 and became bound to the provisions of this convention. This has in its scope and objects, apart from patents, industrial designs and trademarks, utility models,

[5] See at http://www.wipo.int/sme/en/ip_business/utility_models/where.htm
[6] This research was conducted by Mr.Takeyuki Iwai, a senior researcher in Institute of Intellectual Property, Tokyo, Japan and published in IIP Bulletin,2004,pp38-48
[7] Uma Suthersanen-Utility Models and Innovation in developing Countries, February 2006-UNCTAD-ICTSD Project on IPRs and Sustainable Development, Issue paper No.13, available at http://www.unctad.org/en/docs/iteipc20066_en.pdf and last seen on August 23,2007

service marks, trade names, indications of source or appellations of origin and the repression of unfair competition[8]. Further it also provides for a right of priority for the purpose of filing of application in other member countries within certain period of time.[9]This period could be between six months to twelve months depending upon the kind of industrial property. For instance, a period of twelve months for patents and utility models and six months for industrial designs and trademarks from the date of filing of the first application. Furthermore, it is permissible to file a utility model application in country by virtue of a right of priority based on the filing of a patent application and vice versa[10]. Under the provisions of the Convention, the applicant can also divide his patent application into patent application or utility model either *suo-motto* or on the receipt of the examination report that application discloses more than one invention. The provisions of importation and compulsory licences, failure to work or insufficient working in respect of patents are also applicable, mutatis mutandis, to utility models[11].

Similarly, there is another international system which mainly provides a simplified procedure for filing of an application for the grant of patent to the invention in each of its contracting member countries by filing an international application. This system is known as Patent Cooperation Treaty and popularly known as 'PCT'. This treaty was concluded in 1970 and entered into force on January 21, 1978 but modified several times. There are about more than 135 members to this treaty. India has become member to this treaty with effect from December, 8, 1998. Although this treaty mainly provides for unified procedure for international patent application in respect of filing, international search for novelty purpose, international publication and optionally for international examination before entering the national phase of individual member country, but encourages and protects utility models procedurally. The provisions of this treaty enable the inventors or the applicants filing of an international application for the grant of patent claiming priority based on the utility model application[12].The provisions of this treaty also construe the

[8] Article 1.1 of Paris Convention
[9] Article.4
[10] Article 4E(2)
[11] Article 5,
[12] Article 2(i) of the Patent Cooperation Treaty defines 'application' means an application for the protection of an invention; references to an application shall be construed as references to applications

reference of patent, unless expressly stated otherwise, as patents for inventions, inventors' certificates, utility certificates, utility models, patents or certificates of addition, inventors' certificate of addition and utility certificates of addition[13]. Accordingly, PCT also permits to file Utility Model application through National phase utilizing the priority date and flexibilities provided therein as applicable for patent. Therefore the utility model is one of the important forms of the intellectual property which is not only recognized world over but also in the international treaties and conventions.

Perhaps the last international agreement in respect of intellectual property is the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) which, was concluded about 12 years ago and has come into existence from January, 1, 1995. This agreement provides for standards concerning the availability, scope and use of intellectual property in respect of Copyright and Related Rights, Trademarks, Geographical Indications, Industrial Designs, Patents, Layout Designs (Topographies) of Integrated Circuits, Protection of Undisclosed Information and Control of Anti-competitive Practices in Contractual Licences[14]. It does not provide for establishment of utility model system by member country but has reference to the provisions of Paris Convention through the provisions of Article 2,3 and 4 of this agreement(Part-I). Since TRIPS provides for only minimum standards for the protection of intellectual property rights, there is nothing which prevents any member country to adopt utility model system to promote IP protection among the small innovators particularly in the Small and Medium Sized Enterprises (SMEs).

1.1.3 India's initiatives in IP: Recently India has taken several initiatives to promote intellectual property protection and strengthen the Intellectual Property administration with the objective to establish an Intellectual Property Rights (IPR) regime which maximizes the incentives for the generation and protection of intellectual property by all types of inventors. The regime would also provide a strong, supportive and comprehensive policy environment for speedy and effective domestic commercialization of such inventions so as to

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for patents for inventions, inventors' certificates, utility certificates, utility models, patents or certificates of addition, inventors' certificate of addition and utility certificate of addition.

[13] Article 2(ii) of PCT

[14] Part-II,section1-8 of the TRIPS Agreement

be maximal in the public interest[15].This policy statement provides that Intellectual Property Rights (IPR), have to be viewed, not as a self-contained and distinct domain, but rather as an effective policy instrument that would be relevant to wide ranging socio-economic, technological and political concepts. The generation and fullest protection of competitive intellectual property from Indian R&D programmes will be encouraged and promoted. The legislation with regard to Patents, Copyrights and other forms of Intellectual Property will ensure that maximum incentives are provided for individual inventors, and to our scientific and technological community, to undertake large scale and rapid commercialization, at home and abroad[16]. In order to achieve, such goals and objectives India has not only amended its existing Intellectual Property laws such as the patent law, the copyright law but also replaced the old laws with new enactments such as trademarks law and the design law. Apart from this, several other new Intellectual Property legislations have also been enacted such as Geographical Indications of Goods (Registration and Protection) Act, 1999, Plant Variety Protection and Farmers Rights Act, 2001, Biological Diversity Act 2002, and The Semiconductor Integrated Circuits Layout Design Act, 2000. India also overhauled its IP administration and undertaken modernization project To complement the legislative initiatives with respect to IPRs, Government has also undertaken the project for modernization of Intellectual Property Offices comprising the Patent Offices including Designs Wing, the Trade Marks Registry and the Geographical Indications Registry at a cost of about US $ 35 million[17]. It also aims to enable IP offices to adopt the global best practices for providing services in an efficient and user-friendly manner. India has also set up WTO Cell in the Ministry of Small Scale Industry to assist the Small, Medium and Micro Enterprises (SMMEs) to take advantage of global IP System in order to protect their intellectual creations. Finally, India also took the lead in the protection of traditional knowledge and prevention of bio-piracy. At meetings of the World Intellectual Property

[15] India's Science and Technology Policy 2003 objective statement, *available at* the website of Department of Science and Technology,Ministry of Science and Technology, Govt. of India , http://dst.gov.in/stsysindia/stp2003.htm, visited last on July24,2007

[16] See ibid.

[17] Rambabu: Modernization of Intellectual Property Offices in India, Ideas from the Japanese Patent Office, available at http://www.apic.jiii.or.jp/n_c/wsquare/Mr.Rambabu.pdf., last visited on June,11,2007

Organization (WIPO), India has initiated a proposal to make disclosure of the origin of genetic resources mandatory. At the World Trade Organization (WTO) also, India has moved an amendment to the TRIPs agreement so as to make such disclosures mandatory in order to prevent bio-piracy and preserve traditional knowledge[18]. The project on preparation of a digital library on traditional knowledge (TKDL) concerning medicinal plants and herbal-based cures covering the Indian systems of medicine is nearing completion and negotiations with other Patent Offices on sharing this database of over 1.5 lakh formulations have been initiated[19]. However, in spite of all these efforts, there is no law yet for the protection of utility model which can protect the small innovations which have lesser innovative steps and novelty but have practical benefits in order to satisfy the customers need and requirements.

1.1.4 India's economic scenario: Before 1990, India had closed economy system. But the reform initiatives initiated thereafter, have brought tremendous changes in the economic development process. Today India's GDP has already cross 8.5% and striding hard to achieve 10% before 2010.The current Growth rate of 9.0 per cent and 9.2 per cent in 2005-06 and 2006-07, respectively, by most accounts, surpassed expectations[20]. This kind of economic growth has been achieved mainly due to impressive performance by service sector; enhance industrial activities and agriculture sector. Although the services sector is performing very well but industry sector is expected to improve further. Industrialization process has also rapidly picked up high momentum. Due to such a phenomenal economic success, the direct foreign investment is also increasing rapidly. In other words the sharp rise in the investment is also responsible for the current growth phase of economy. The year 2006 has been a year of record foreign direct investment (FDI) inflows with FDI equity inflows alone during 2006-07 expected to cross US $ 11 billion, more than double the equity inflows of US $ 5.5 billion last year[21]. India's merchandise exports (in US dollar terms and on customs basis), which

[18]Indian Press release dated December 26,2006 available at the website of Press Information Bureau, Government of India, http://pib.nic.in/release/rel_print_page1.asp?relid=23630 ,last visited on July 23,2007

[19] ibid.

[20] The Economic Survey 2006-07 available on the website of Ministry of Finance, Government of India at http://indiabudget.nic.in/,last visited on June 7,2007

[21]Indian Press release dated December,26,2006, available at http://pib.nic.in/release/rel_print_page1.asp?relid=23630 , last visited on July 23,2007

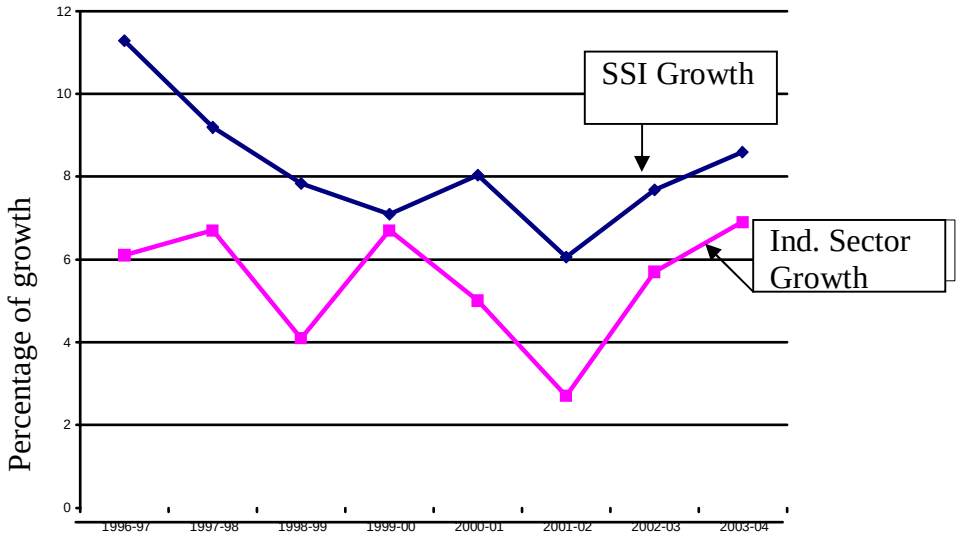
has been growing continuously at a high pace of more than 20 percent since 2002-03, continued its momentum and grew by 23.4 per cent to cross the US$100 billion mark in 2005-06. Exports during 2006-07, which gained momentum after a slow start, reached US$89.5 billion in April-December, 2006. [22] India is also encouraging Indian companies in acquisition of technological capability in various sectors of the industry through a liberal foreign technology collaboration regime. Foreign technology induction is facilitated both through FDI and through Foreign Technology Collaboration (FTC) agreement.[23]

1.1.5 Role of SMMEs in the economic development: In India small scale industry plays a very vital role in the economic growth of the country. This sector has been growing rapidly and definitely faster than the whole of manufacturing sector, at the rate of 7% to 10% during the past decade.[24] This sector is a less capital-intensive producer of consumer goods and provider of employment thereby addressing not only the problem of unemployment but also playing very important role in poverty removal process and therefore acquired a prominent place in the socio-economic development of the country. According to the estimates of 2003-04,at present there are about 11.359 millions SSI Units(registered and non-registered) in the country accounting for more than 40% of gross value of industrial production and about 34%of the total export of the country[25]. It also provides employment to about 27.14 million persons, which is second only to Agriculture[26].

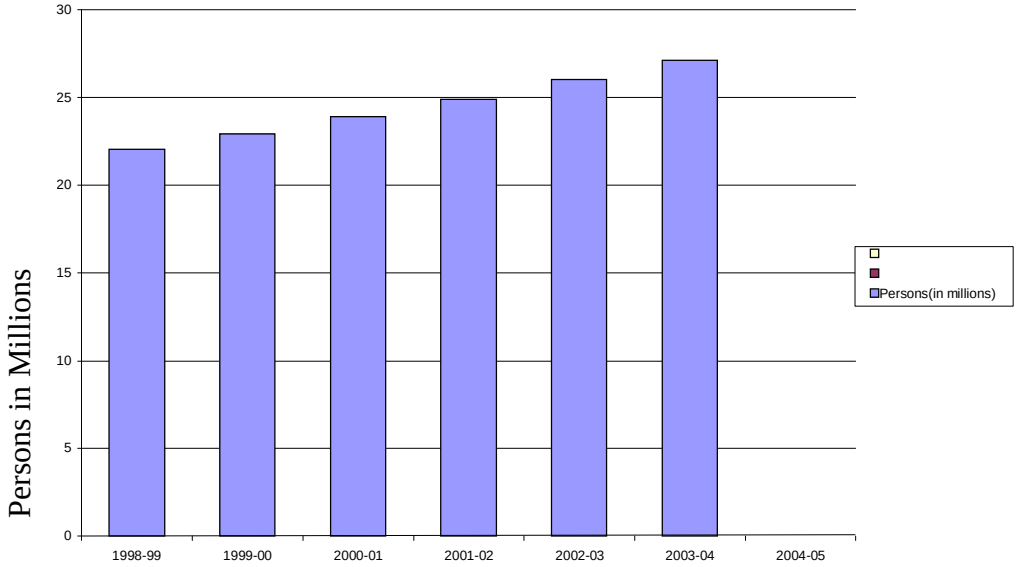
(a) Production growth of SSI Sector and whole Industrial sector:-The graph below indicates that Small Scale Industry sector is growing at a rate faster than the over all industrial sector. In the year 2003-04, the growth rate of SSI sector was 8.59% as compared to total industrial sector which had only 6.9% growth. This is based on the statistical data given in the hand book of

[22] The Economic Survey 2006-07 available at http://indiabudget.nic.in/
[23] Annual Report 2005-06,Department of Industrial Policy & Promotion, Ministry of Commerce and Industry, Government of India, available at http://dipp.nic.in/anrepo_e/annual_report_eng_2005-06.pdf.
[24] Press Information Bureau, Government of India, Press release dated,December,30,2004 available at http://pib.nic.in/release/rel_print_page1.asp?relid=6163
[25] Hand book of Industrial Policy and Statistics,2003-04,Ministry of Commerce and Industry,pp-155,available on the Ministry website at http://eaindustry.nic.in/new_handout.htm visited on June 7,2007
[26] ibid.

Industrial Policy and Statistics, 2003-05, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion.

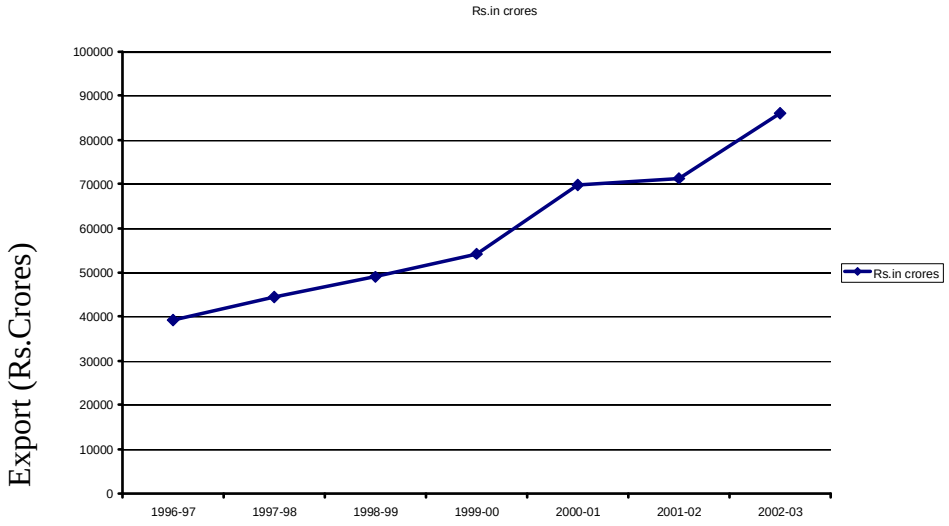


(b) Employment generation indicators:-As stated above, the Small Scale Industry sector has been playing very important role in providing employment opportunities to the people and is next only to the agriculture sector. It has been estimated that the investment of about Rs.100, 000 in this sector generates employment to at least four people. The employment generation activities of this sector as shown the graph below are increasingly growing. In the year 2003-04, this sector has provided employment to about 27.14 Million people and 2004-05 about 28 million people.



(Data Source: Hand book of Industrial Policy and Statistics, 2003-05, Ministry of Commerce and Industry**)**

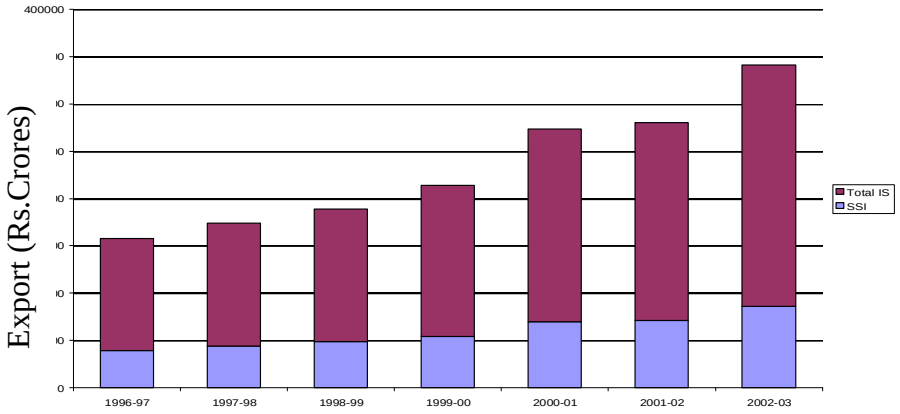
(c) Export indicators of SSI Sector:- As mentioned above that Small Scale sector is contributing nearly to about 35% of total export of the country. Besides this, it is also responsible for indirect export of about 15% through merchant exporters, trading houses and export houses[27]. Therefore, SSI Sector has also been playing a major role in India's present export performance which is about 45%-50% of the total Exports. The graph below indicates the rapid growth of export achieved by Small Scale industries. In the year 2002-03 this sector was responsible for export of about Rs.86013 crores of goods out of total production of about Rs.228730 crores of goods.



(Data Source: Hand book of Industrial Policy and Statistics, 2003-05, Ministry of Commerce and Industry**)**

(d)Export indicators of SSI vs Total industrial Sector:- This graph indicates the export growth of SSI sector against the total export growth of Industrial sector. In the year 2003-04, the growth rate of SSI sector was 8.59% as compared to total industrial sector which had only 6.9% growth. As mentioned above, in the year 2002-03 SSI sector was responsible for export of about Rs.86013 crores of goods as compared to total export of Rs.255137 crores.

[27] Office of Development Commissioner, Ministry of Micro, Small and Medium Sized Enterprise website.http://www.smallindustryindia.com/ssiindia/performance.htm last visited on June,7 2007



(Data Source: Hand book of Industrial Policy and Statistics, 2003-05, Ministry of Commerce and Industry**)**

1.1.6 Low IP Protection and R&D activities: - In spite of high economic growth and expansion of industrial sector, the intellectual property protection activities in India are very low as compared to many developing countries such as China, Korea, even a small country like Taiwan. We are well behind to Japan, United States, and European Patent Office. We are not only lagging well behind in terms of total industrial property applications but in terms of applications filed by domestic applicants as well. A comparison of Industrial applications of some countries is given below.

Table- 1 Comparison of Industrial applications (2005-06)

Type of IP	**India**	Japan	U.S	EPO	China	Korea	Taiwan
Patents	**24504**	427,078	390,733	135,183	173327	157,114	47841
Designs	**4949**	39,254	25,304	-	163371	46,318	8,375
Trade Marks	**85669**	135,766	275,790	-	664,017	154,937	63,580
Utility Models	**N.A**	11,386	NA	-	139566	36,945	23,226

(Source: IP Offices websites)

Table-2 Comparison of Industrial applications –Domestic vs Foreign (2005-06)

Type of IP	**India**	Japan	China	Korea	Taiwan
1.Patents	**24504**	**427078**	**173327**	**157114**	**47841**
(a) Domestic	**4521**	**367960**	**93485**	**121610**	**20,093**
(b) Foreign	19982	59118	79842	35504	27748
2.Designs	**4949**	**39254**	**163371**	**46318**	**8375**
(a) Domestic	**3407**	**35746**	**151587**	**42988**	**4987**
(b) Foreign	1542	3508	11784	3330	3388
3.Utility Models	**Not Yet available in India**	**11386**	**139566**	**36945**	**23,226**
(a) Domestic		**9421**	**138085**	**36312**	**22,641**
(b) Foreign		1965	1481	633	585

(Source: IP Offices websites)

Although now a days, India has been becoming a hub for the international R&D activities of many multinational corporations as they are only outsourcing their research activities in India but domestic companies including small scale industry sector and individual inventors are lagging far behind. This is in spite of the fact that India is producing more than 200,000 S&T Manpower every year and nearly 296,000 personnel are employed in the R&D establishments[28].Apart from this, there are about 550 National laboratories (Central Govt. and Public sector), about 770 State Government Laboratories, about1200 in-house R&D Departments and185 Private Sector R&D Units. The investment on Research and Development activities has also attained a level of more than Rs180, 000 millions (Rs.18, 000.16 crores) which is about 0.80% of Gross National Product (GDP).[29]This kind of low R&D expenditure (0.6% to 0.8%)has been around for many years. In India, there are about,500 Universities, Deemed Universities and National Importance Institutes in addition to more than thousands of public and private engineering colleges and other technical institutions. With these resources, in India there are more than 50,000 research papers being published every year in the scientific field. The tables-3 and 4 below give the details of out turn of scientific manpower and research papers publications every year respectively.

Table-3-Out Turn of S & T personnel from Universities:

Sl. No.	**Fields**	**Number of S & T (including Graduate Post Graduate and Doctorates**		
		1979	1989	1995
1.	Science	1,19,649	1,62,001	1,66,219
2.	Engg. Tech.	22,025	34,047	36,463
3.	Medicine	18.575	2,393	24,247
4.	Agriculture and Veterinary Science	9,144	11,969	8,863
	Total:	1,69,393	2,31,930	2,35,792

(Source: Research and Development statistics 2000-2001)

Table-4 Research papers published from India:

Sl.No.	**Fields**	**1995**	**1996**	**1997**	**1998**	**1999**
1.	Agriculture	11515	11739	11700	12782	11702
2.	Biological Science	9992	9537	9226	8880	8948
3.	Chemical Science	12569	13448	13467	14237	13384
4.	Earth Science	1390	1078	923	1102	890
5.	Engineering	3658	4540	4696	3755	4550
6.	Medical Science	3988	4132	4490	4637	5633
7.	Physical Science	5709	5655	5642	5725	5695

(Source: Research and Development statistics 2000-2001)

[28] Annual Report 2005-06,Department of Science & Technology available at http://www.dst.gov.in/
[29] ibid

One of the reasons for the low IPR protection activities, may be that the MNCs in India, which well equipped with their research and developments facilities, capable of hiring best technical manpower and doing lot of innovative activities as they have no dearth of money to invest in these activities, are filing their IP applications first in their own country then filing in India. However their activities are basically targeted to enhance their profit within short time probably without understanding the need of common man. Secondly, the SMEs, also known as SMMEs, are lacking in research and development activities due to resources and investment and therefore mainly engaged in the production of goods keeping in mind the requirement of common man. Further, now days they are also facing lot of competition in the market not only among themselves but also from the imported goods, and therefore directing their innovative work in the improvement in the existing products to improve their quality, shape, designs, etc. as per the modern days requirements. However this kind of innovative work done in the SMSE sector goes unnoticed as this kind of new innovative work is short lived due to competition from foreign goods as well as from Indian goods and unable to meet the requirement of patentable subject matter such as novelty and inventive step as patenting needs greater degree of inventive step and world wide novelty criteria. Fourthly the universities, R&D organizations and other technical institutions, although they are publishing huge number of research papers every year, are lacking in framing Intellectual Policies and IP strategy and therefore failing to convert their research creations into intellectual property assets as they are unable to file applications for intellectual property rights. Fifthly, there is low expenditure on research and development activities, which has been about 0.80%of GDP as compared to other countries which is between 1.5-3.5% of GDP. Sixthly, the private sector is also not making much investment in R&D. In developed countries like Japan, US, Germany, and even developing countries like Korea, China and Taiwan, the R&D expenditure by private sector is much more than the public sector or government sector. In India, the major share in R&D expenditure is from the Central Government source (62.0%).The state Government share is being 8.5%, Higher Education 4.2%, Public sector industries 5.00% and remaining is

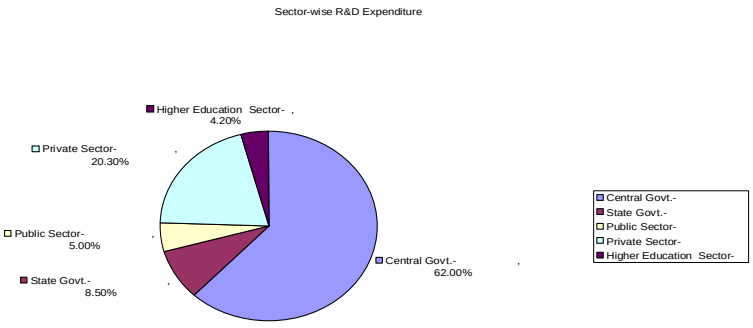
from Private Sector (20.3%)[30].The details of national R&D expenditures as percentage of GDP and sector wise are given in the table-5 and graph respectively as shown below. Seventhly and most importantly, in India, apart from patent system and design protection system, there is no other alternative system such as Utility Model Protection System, exists to provide protection to the petty research work or small innovative work which has utility to meet the requirement of the people but lacking inventive step to satisfy the novelty and inventive step criteria for patent protection.

Table-5 National Expenditure on R & D

Sl. No.	Year	R & D Expenditure (Rs. Crores)	R & D on % GNP
1.	1993-94	6073.02	0.79%
2.	1994-95	6622.44	0.73%
3.	1995-96	7483.88	0.71%
4.	1996-97	8913.61	0.72%
5.	1997-98	10611.34	0.77%
6.	1998-99	12901.54	0.81%

(Source: Research and Development statistics 2000-2001).

Sector wise R&D Expenditure.



In addition to above reasons, lack of awareness about the importance of intellectual property rights in SMEs sector is also responsible to certain extent, although there have been lots of initiatives undertaken by the Government recently.

1.1.7 Suitability of existing IP system to protect small innovative activities: It can be observed from the afore-mentioned data that in India only 20 to 25 % patent applications are filed by the domestic applicants and remaining applications by foreign applicants and this not different in case of

[30] ibid.

industrial design applications. This mainly due to less expenditure on R&D activities, less R&D expenditure by private sector and also lack of capability of universities, R&D organizations and other technical institutions to convert their research creations into intellectual property applications. Apart from this, patentability criteria for patenting any invention are very strict such as worldwide novelty, and greater degree of inventiveness. Further patenting system also takes longer time for granting patent rights. Similar is the case with design registration law due worldwide novelty and originality issues. Moreover, the design registration is limited only to the features of shape, configuration, pattern, ornament or composition of lines or colours applied to any article whether in two dimensional or three dimensional or in both forms, by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and are judged solely by the eye[31].Further the design does not cover or include any mode or principle of construction or anything which is in substance a mere mechanical device and therefore any innovative work related to the such activities can neither be protected under the Design law nor under the Patent Law. As pointed out above, the SMMEs sector is mainly engaged in manufacturing and petty innovative work in the existing products or in designing utility products to meet the utility requirement of the public or common man. However, such work can not meet the strict global requirements either of patentability or of new and original requirement of industrial designs. They are also perhaps dissuaded and discouraged to apply for registration for patent and industrial design rights due to high cost and more time involved in such registration system as their petty innovative work has short life due to tough competition. Therefore this sector seems to be highly hesitant to protect their IP rights as current or existing Industrial Property protection system is not sufficiently enough to protect the small or petty innovative work done either by them or individual innovators.

1.1.8 Does India need Utility Model Law?: Although India has put in place very modern Patent and Design laws recently but the small scale industry sector and small innovators are still unable to take full advantage of these legislations as under these legislations, the requirements of patenting and

[31] The provisions of section 2(d) Indian Designs Act, 2000(No. 16 of 2000) defines the term 'design'

registration are very stringent and global in nature and at the same time, take lot of time and very expensive. Due to these reasons, these small innovators and Small Industry sector seem to have lost interest. At the other hand the Utility Model System is less expensive, provides registration within short time (may be within less than six months) and need no substantive examination. Utility model can be registered by formal examination and term of protection may be any thing between 10 to 15 years (no country has more than15 years). In this context, we can learn from Japan as to how Japan has utilized the UM System to their economic and technological advantage. Until World War II, the technical level in Japan was low compared to western countries but they soon realized the need of developing their own technology. Although Japan has Utility model system since 1905 but it has been amended several time to suit Japanese industrial development in order to encourage protection to local innovations and thereby promoting science and technological development in the country. Today Japan stands very high in the technological development as utility model system remains part of business strategy and therefore regarded as one of the most advanced nations. In this background this research would analyze as to how Japan has utilized this system for its economical development and also as to whether similar system would be suitable for India in order to enhance its economical and technological development.

1.2 OBJECTIVES:- The objectives of this study *inter-alia* is to find out as to whether utility model is an another good and valuable tool for the economic as well as technological development for a country particularly for developing countries where small and medium sized enterprises play an important role in the economy, provides alternative system for the promotion and protection of IP, provides economical and faster system for protecting small innovations. The objective of this study is also to analyse as to whether the Utility model System is required for India in order to enhance further the economic and technological progress. The study would also analyse as to whether, Utility Model System would be more suitable to small innovators and Indian SMMEs to encourage their intellectual property creation and protection activities to meet global competitive challenges as compared to current Patent and Design law.

1.3 METHODOLOGY- The following methodology was adopted by focusing various issues in order to achieve the objective of this research study.

1.3.1 Study and Review of the documents related to utility model and industrialization,-

The provisions of law and implementing regulations related to utility model of some developed Countries like Japan, Germany and Australia and also some developing countries like Korea, China, Brazil and Taiwan China were studied and reviewed. Study of Taiwan UM system was interesting as being a tiny Country, has made tremendous technological progress. Apart from this, some annual reports, statistical data, articles and other documents, were also reviewed

1.3.2 Visits and personal interviews to various organizations,-

To understand the system well in terms of its implementation and usefulness practical aspects and implications the visits were made to Japan Patent Office, Law Firms/ Intellectual Property Attorneys and some companies/industries and business entities in Japan to have personal interviews with the people who are responsible to implement the law or using the system to protect their IP creations and people who are playing important role in assisting the corporations to protect their IP creations. These kinds of interview provided the opportunities to have a close look on the system to analyse as to whether this system really plays a role in economic and technological development and also as to how they have utilized the system to their maximum gain. This kind of activities are supplementary to the questionnaires as sometimes some people are hesitant to reply the long questionnaire but can answer the questions while being interviewed.

1.3.3 Dispatching questionnaires,-

In addition to the visits and personal interviews, different kind of questionnaires prepared and dispatched to the officials of Japan Patent Office, law firms/ intellectual property attorneys, companies/industries in Japan. However a separate questionnaire was prepared for dispatching to law firms/ intellectual property attorneys in India to have their opinion about suitability of this law in India and also share their experience regarding this law as they have experience in dealing with IP applications in this field.

CHAPTER-II

INDUSTRIALISATION IN JAPAN

2.1 Historical development of industrialization:

Japan has long history of economic and industrial development. The economic and industrial development in Japan has taken place mainly due to the transfer of scientific and technological knowledge which was transferred in many ways. Mostly it was acquired through technology transfer by licensing agreements of patents and know-how including production and other management system. The copying of foreign technologies and developing them in order to meet their requirement has also played an important role. It was also acquired by bringing people from abroad and also sending Japanese people aboard. In fact Japan was the first major nation outside the western world to adopt the technological advancements which occurred in the western countries after first industrial revolution in the United Kingdom. Moreover, Japan became the first non-western nation to establish itself as fully capable to adopt technological advances taken place worldwide and contribute to sustained technological developments whereas much of the non-western world remained technologically backward except few countries like Korea, Taiwan, etc. and therefore it remained a model for many countries who have not yet been able to adopt modern and latest technologies. Although the Japanese economic, technological and scientific development has under gone through many phases and periods, for the purpose of this study, it would be studied in the following main periods.

(i) Pre- Edo Period
(ii) Edo-Period
(iii) Meiji Period to World War II
(iv) Post World War Period
(v) Current situation

2.1.1 Pre-Edo Period:- The technological and economical development in Japan prior to the fifth century was not known much. However the first major importation of culture, scientific and technological knowledge stated to have taken place in the fifth to ninth century when the Emperor's government still

had real power and then in the sixteenth century, when feudal lords(daimyo) fought each other[32]. Apart from this, it had also been said that some occasional contacts with china and Korea had also brought valuable knowledge. The economic and industrial development of Japan in pre-Edo period could be traced back when it had first contact with west only in 1543.it was only when a Portuguese ship was drifted away ashore due to a typhoon, on Tanegashima a small island in south west. These Portuguese Europeans found that Japan had a sophisticated society with high culture and strong pre-industrial technology. They were also impressed with the Japanese craftsmanship and metal-smithing. During this period Japan had first export trade with Europeans such as Portuguese, Dutch, British, Spanish, etc mainly of weaponry as they brought with them guns.

2.1.2 Edo-Period:- Edo period started with the formation of the government in 1603 by Tokugawa Ieyasu who defeated Hideyoshi, son of Emperor Toyotomi Hideyoshi who conquered every part of Japan. Tokugawa Ieyasu was later on nominated to be a shogun, by the emperor, who had the real power. The beginning of Edo -period also started coincidentally with the last decade of the Naban[33] trade period. Since Tokugawa Shogunate was based on the feudalistic society, it prohibited Japanese from having any trade with and relationship with outside world particularly with Europeans and western countries, believing that Christianity would destroy the feudalistic society and therefore monopolized the trade within the country but continued to have information regarding foreign affairs and trade including science and technology and medical science from the Dutch. In 1721,the government announced prohibition of new matters by decree(ordinance prohibiting innovation),banning the domestic manufacturing and sale of new clothes, confectioneries, and various other items based on new technology as such new matters were considered to be luxurious.

However, in terms of indigenous technology, the Tokugawa era was hardly a static period. In order to fostering industrial development, the government made certain policies of protecting the existing technologies, inventions and innovations and individual possessions of trade rights. Apart

[32] Hiroyuki Odagiri and Akira Goto `Technology and industrial development in Japan, Building Capabilities by Learning Innovation and Public Policy`,1996,pp.12－13

[33] The Europeans particularly Portuguese were known or called as Naban

from this, government also recognized commercial and industrial guilds in large cities consisting of members in the same lines of business. In order to deal with technology or product of new inventions, it was necessary to take approval from the government with the condition that such technology or product of new inventions offered broad public benefits[34].

The government also undertook and implemented various industrial promotion measures for protecting and promoting local specialty products whose production was managed by their relevant domain in order to preserve the rights such as Minot's fermented soybean, Sendai domain's baskets, the Akou domain's(west of Osaka)salt and salt production technology. The main objectives of these protective measures were to maintain product quality in order to combat counterfeiting as knowledge about the technologies were not allowed to widely spread and therefore remained confidential.

These measures, however, on the other hand, prevented Japan for about 250 years from enjoying the progress made in the west including the vast technological advances made during the industrial revolution originating in England in the second half of eighteenth century[35]. Therefore Japan was definitely far behind the west in technology from the 17th to 19th century[36]. During this period Japan remained in isolation, although the economy enjoyed stability and mild progress as rice was the base of economy and high tax collections (40% of the harvest).The economic development during this period mainly included urbanization, increased shipping of commodities, expansion of domestic and some extent foreign trade and a diffusion of trade and handicraft industries. Japan also progressively studied western sciences and techniques through the information and books received through the Dutch traders such as medicines, natural sciences, astronomy, physical sciences including electrical phenomena and mechanical sciences[37]. By the end of the Tokugawa period, Japan had laid the foundations for subsequent industrialization and economic modernization.

In 1858 Shogunate government was forced to open the ports of Japan to foreign trade due to pressure from the western nations such as United

[34] Experience of Japan, published by Institute of Intellectual Property, 2001,pp14－15
[35] History of Japanese Industrial Property System, published by the Patent Office,Japan,1996,pp-3
[36] Ibid.
[37] http://en.wikipedia.org/wiki/economic-history-of-japan

States, England, France, etc. this contributed to rapid absorption of the western economic and technological system. However the opening of Japan to the west ultimately led Tokugawa Shogunate government to fall and the beginning of the Meiji era under a new government in 1868.

2.1.3 Meiji period to World War II :- In 1868, in order to restore imperial rule, young samurai and court nobles overthrew the Tokugawa Shogunate which ruled the Japan for about two and half century[38].The imperial rule was established under Emperor Meiji who moved from Kyoto to Tokyo which became the new capital. However the actual political power was transferred from the Tokugawa Bakufu into the hands of a small group of nobles and samurai. As Japanese were forced to sign unequal treaties with Western powers which granted the Westerners one-sided economical and legal advantages in Japan, Meiji government was determined to close the gap to the Western powers economically and militarily in order to regain independence from the Europeans and Americans. Therefore, drastic reforms were carried out in practically all areas[39].

The one of the priorities of the new government was to make Japan a democratic state with equality among its entire people and therefore various reforms initiated by the government In order to stabilize the new government, the former feudal lords (daimyo) had to return all their lands to the emperor. This was achieved already in 1870 and followed by the restructuring of the country in prefectures[40]. Japan received its first constitution in 1889. A parliament was established while the emperor being head and kept sovereignty but the actual power were with young samurais, and the able and intelligent emperor Meiji agreed with most of their actions[41].By providing a new environment of political and financial security, the government made possible investment in new industries and technologies.

(a) Economic and technological development initiatives: In order to transform the economy into a developed industrial economy, many Japanese scholars were sent abroad to study Western science and languages, while foreign experts taught in Japan and new education system was established.

[38] Hiroyuki Odagiri and Akira Goto, `Technology and industrial development in Japan, Building Capabilities by Learning Innovation and Public Policy` 1996,pp.16
[39] http://www.japan-guide.com/e/e2130.html
[40] http://www.japan-guide.com/e/e2130.html
[41] ibid

The transportation and communication networks were improved by means of large governmental investments. The government also directly supported the prospering of businesses and industries, especially the large and powerful family businesses such as Mitsui, Mitsubishi or Sumitomo, etc. These reforms led to quick economic developments. In order to support industrial development, the government started industrialization by building new industries in the field of mining, railroad, shipbuilding, machinery, textiles, cement, glass, etc. It was during this period when government encouraged the import of technology from abroad particularly from western countries such as United States and European countries, the clear guidelines for patents and other rights were created.

(b) Evolution of Patent system: As a result of Meiji restoration, the drastic changes were made by the government due to which commerce and industry also enjoyed the influx of new ideas including the concept of patent system. Mr. Yukichi Fukazawa, the founder of Keio university and a great thinker and educationist, who also traveled abroad particularly Europe and Mr.Takahira Kanda, a bureaucrat and great scholar during this period, played a very important role in the introduction of a patent system in Japan as they understood the importance and contribution of the patent system to the economic and technological development of the country[42]. As a result of their efforts first patent law was enacted with the Promulgation of the Provisional Regulations for monopoly in 1871 based on the principles of examination and first to file[43].

However, Provisional Regulations for monopoly could not work well and therefore failed due to lack of technically qualified persons such as examiners to examine the applications, proper infra-structure, and also system being new to Japanese people. Although the Provisional Regulations for monopoly was suspended, people still used to file applications in Tokyo prefecture. One of the inventions which were filed around that time was rickshaw as a means of transport but no patent was granted. Due to suspension of this law, the Japanese market was in the state chaos in the as no adequate law to protect the new technologies and products. This led to indiscriminating counterfeiting

[42] Experience of Japan, published by Institute of Intellectual Property, 2001,pp-17

[43] Ibid,pp-18

and copying resulting into spurious products in the market, damaging the entire domestic and import industries.

After extensive preparation by Mr. Masan Maeda, the then senior secretary of Agriculture and Commerce who compiled the opinion of the people on promoting industry including, the need to establish the patent system in order to counter the situation and regulate the counterfeited and inferior goods and Mr. Korekiyo Takahashi, in the Ministry of Agriculture and Commerce, the Patent Monopoly Ordinance was finally promulgated on April 18, 1885. Mr. Korekiyo Takahashi became the first commissioner of the Japanese Patent Office[44]. This day now days is also commemorated as Invention Day in Japan[45]. The patent monopoly bureau was established in 1886 with a Director General with three appeal examiners, one examiner and one assistant examiner which was expanded to five appeal examiners, fifteen examiners and twenty assistant examiners. The very first invention in Japan was the'Hotta—Style anti corrosive paint and painting method` which was filed on July 1,1885 and second to fourth patents were obtained by Mr. Kenzo Takabayashi for tea manufacturing appliances, who later exported the technologies to overseas[46].Other inventions of that time were noodle making machine by Mr.Masaki who later on went on to obtain over 50 patents and utility models, umbrella that opens automatically, and dry cell battery etc.

In 1884, just before Patent Monopoly Ordinance, the Trademark law was promulgated and in 1889, the Design law was introduced. In the first year only 425 patent applications were received which became more than double to 906 in 1887 and reached 1,515 in 1899[47].However under this law foreigners were excluded from filing the patent application, although there was no clause existed in the law for such exclusion. On this point some people favoured granting of patent rights to foreigners in order to make western advanced technology for Japan's industrialization and on the other hand some feared that this would hamper the real industrial development. In the mean time on

[44] Ibid,pp-24

[45] History of Japanese Industrial Property System, published by the Patent Office,Japan,1996,pp-9

[46] Experience of Japan, published by Institute of Intellectual Property, 2001,pp-25

[47]History of Japanese Industrial Property System, published by the Patent Office,Japan,1996,pp-11

March 20, 1883, the Paris Convention was concluded with eleven member countries to secure rights related to the protection of industrial property which was also acceded by Japan in 1899.This led to the amendments not only in the patent law but also in the Trademarks law as well as in the Design law in 1899 recognizing the industrial property rights to the foreigners which ultimately internationalized the Japanese patent system.

(c) Economic and Technological growth:-During the thirty years of period from 1885-1914, the economy was on a sustained growth and therefore laid the foundation for the modern economic growth. During this period, the Gross National Expenditures（GNE）became double and per capita GNE grew at 1.6 times and these growth rates were one of the highest among the countries that started economic growth during nineteenth century[48]. In terms of industrial composition, food processing and textiles were the largest manufacturing industries before the end of the century. However, metal, machinery and chemical industries started to grow faster after the turn of the century and many more industries such as iron and steel, electrical machinery and pharmaceutical were established by 1910.The military owned plants were also main features of technological development.

When the Meiji period ended, with the death of the emperor in 1912, Japan had a highly centralized bureaucratic government, a constitution establishing an elected parliament, a well-developed transport and communication system, a highly educated population, and rapidly growing industrial sector based on the latest technology. Therefore industrial development was indispensable to the Meiji government which also advocated for wealth and military.

(d) Promotion of research and development activities: Technological progress was an important factor in the economic growth of Japan. Although the main sources of technological progress were the indigenous technology and technologies imported from the advanced countries. The Japanese companies helped themselves by making full use of imported technology. However it was in this period, when a growing need of creating a foundation for the cultivation of new inventions and technology was felt. Therefore in

[48] Hiroyuki Odagiri and Akira Goto, `Technology and industrial development in Japan, Building Capabilities by Learning Innovation and Public Policy` 1996,pp.22

order to strengthen the scientific and industrial base for promoting the growth of technology based industries, industrialists, policy makers, and scientists made various proposals such as creating basic research institutions, national industrial laboratories and fostering science and technology education.

Accordingly, in order to achieve, these, objectives, more and more universities were established by the government as well as by the private sector. Further, to intensify the research and development activities, several research institutions were also founded. During 1914-30, about thirty eight (38) national research laboratories were founded including those annexed to national universities and military [49] .apart from these laboratories, many companies started their own R&D laboratories. In 1923, there were 162 private R&D laboratories affiliated to the companies, cooperatives and other private sectors foundations. Out of these seventy one (71) were in the chemical fields such as pharmaceuticals, dyes, paint, rubber, cement and paper, twenty seven (27) in metals and machinery and twenty four (24) in food sector[50].

The Research and Development activities were vigorously promoted during 1930-40.According to a rough estimate, there were 350 research organizations including government laboratories, private sector laboratories including those associated with universities and other institutions and departments spending about 30 million yen or 0.22 percent of GNP. However in 1942 the number of private research organizations aroused to 711 employing 33,400 staff and spending 590 million yen or approximately 1% of GNP. In addition, there were 443 public research organizations employing 16,160 staff and spending 296 million yen.[51] These intensified research and development activities enabled the Japanese companies to start building up world class production facilities and development of advanced products such as military aircrafts, ships, alloys and communication equipments. As Japan continued to import the foreign technologies until late 1930 but due to World

[49] Hiroyuki Odagiri and Akira Goto `Technology and industrial development in Japan, Building Capabilities by Learning Innovation and Public Policy`1996,pp.32
[50] ibid
[51] A survey conducted by the technology agency of the cabinet, quoted in the agency of industrial science and technology (1964)pp-125 re-quoted in Technology and industrial development in Japan, Building Capabilities by Learning Innovation and Public Policy by Hiroyuki Odagiri and Akira goto,1996,pp-34

War II the flow of the foreign technologies was stopped. This had serious impact on the technological progress and therefore increased research and development efforts at that time reflected the Japan's efforts to fill up the technological gaps created by such stoppage. The comparison of Gross Domestic Production of Japan with east-Asian nations and United States is given below.

Comparison of GDP per capita between East-Asian Nations and the U.S. in 1935[52]:

Country	GDP/capita, 1935$ (Liu-Ta-Chung)	GDP-PPP/capita, 1990$ (Eukao)	GDP-PPP/capita, 1990$ (Maddison)
U.S.	540	5,590	5,590
Japan	64	1,745	2,154
Taiwan	42	1,266	1,212
Korea	24	662	1,224
China	18	543	562

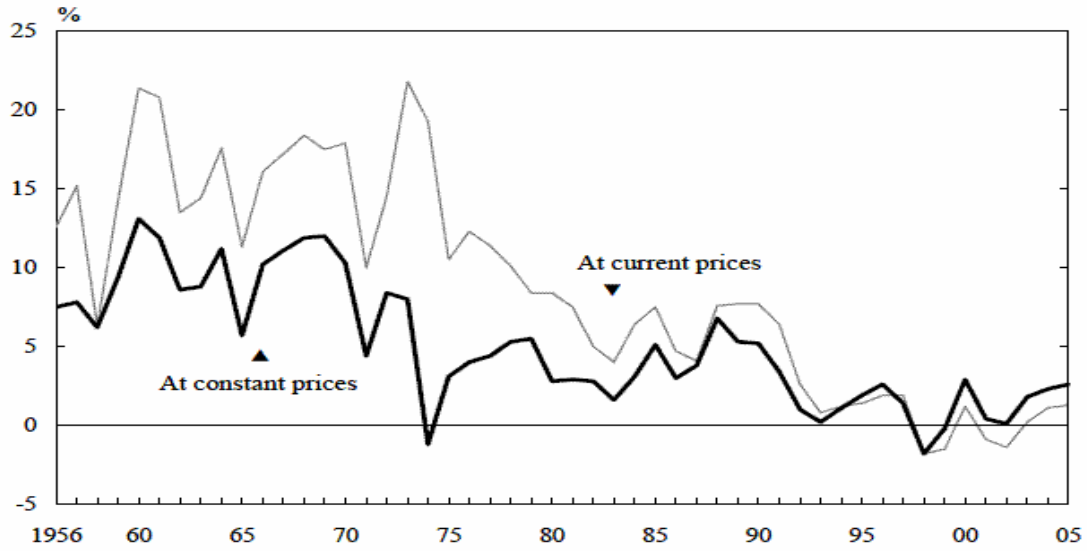
(Source: http://en.wikipedia.org)

2.1.4 Post World War Period: After World War II, Japan had gone through a period of restoration followed by high economic growth, eventually becoming the economy with the second largest GDP in the world in 1967. During the 1960s, Japan's economy grew at a rapid pace, exceeding 10 percent per annum. This rapid economic growth was supported by: (i) expansion of capital investment in the private sector, backed by a high rate of personal savings; (ii) a large transfer of the working population from primary to secondary industries and abundant supply of high-quality labor supported by high population growth; and (iii) growth in productivity by manufacturing sector driven by adopting and improving foreign technologies[53]. Such kind of economic growth was popularly known as `bubble economy'. However, Japan recorded negative economic growth in 1974 for the first time in the post-war period. The various phases of the Japanese economy are reflected below. At the end of the 1980s, Japan's economy enjoyed favorable conditions, with low inflation and a low unemployment rate and achieved a growth rate of about 4%. Corporate profits were also at their highest level in history, and corporate failures were at their lowest level in several years, while investments in plant

[52] http://en.wikipedia.org/wiki/Economic_history_of_Japan
[53] Statistical handbook of Japan 2006,pp-24

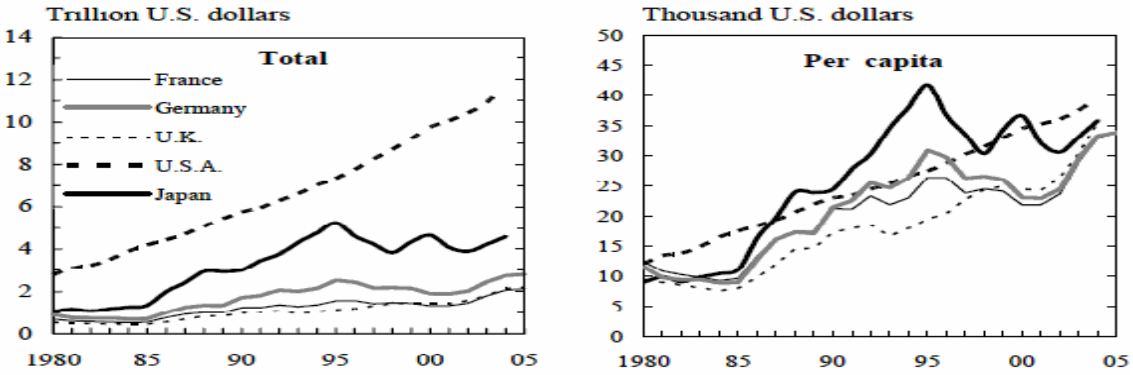
and equipment for manufacturing products, such as semiconductors were very active. The change of Japan's net worth (national wealth) has reflected the status of its economy well. At the end of 1983, Japan's national wealth stood at 1,641 trillion yen, 5.8 times GDP. It then increased further, reaching 3,533 trillion yen, 8.0 times GDP, at the end of 1990. With the collapse of the bubble economy, Japan's national wealth has since shifted into decline, dropping to 2,647 trillion yen at the end of 2004.[54]

Economic Growth Rates



(Source:Statistical Handbook of Japan 2006, published by Statistics Bureau, Ministry of Internal Affairs and Communication)

Gross Domestic Product (Current prices converted in to dollars)



(Source: Statistical Handbook of Japan 2006, published by Statistics Bureau, Ministry of Internal Affairs and Communication)

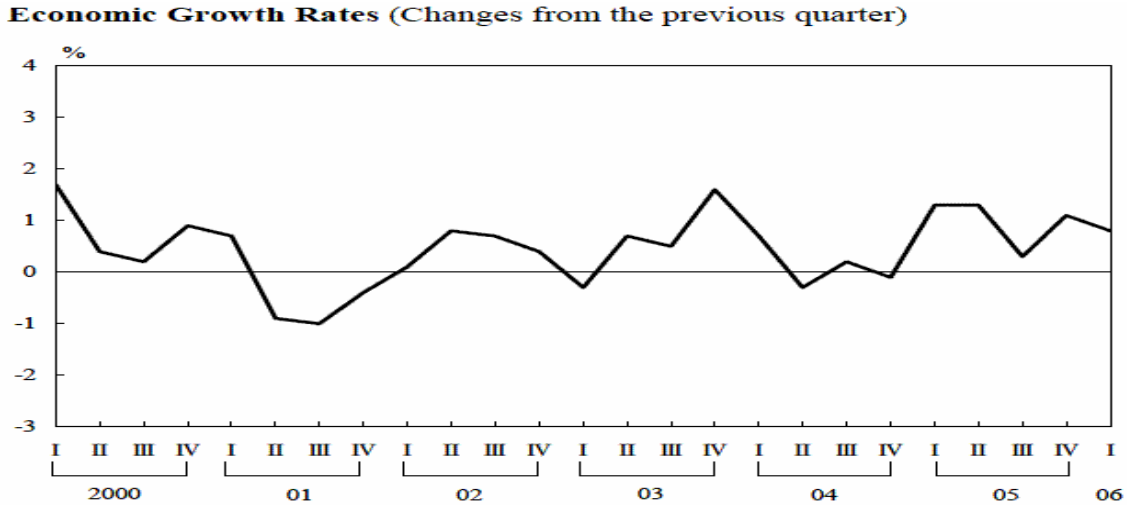
The Japanese economy began to make a moderate recovery in April 1999. However, this was only a temporary phenomenon because investments in plant and equipment were weak and the economy was too dependent on

[54] ibid

foreign demand and information and communication technologies. With the global decline in IT demand from mid 2000, Japan's exports to Asia dropped, necessitating adjustments in production facilities. In line with this, the Japanese economy again entered into an economic downturn in 2001.

2.2. Current Trend:-

2.2.1. Economic trend: Today Japan's economy is the world's third-largest Purchasing Power Parity (PPP) after united states and the people's republic of china and second-largest by market exchange rates.[55] Government industry cooperation strong working ethics high technology development and small allocation for defense are the main reasons which have helped to become one of the largest economies of the world. Japan`s highly educated labor force also played a significant role in the economic growth. From the year 2003 onwards, the pace of Japan's economic recovery increased, supported by relatively high investment and consumption amidst the rapid recovery of overseas economies. As of June 2006, the solid performance of the corporate sector is continuously spreading to the household sector, and accordingly Japan's economic recovery is also continuing which is supported by domestic private-sector demand.



(Source: Statistical Handbook of Japan 2006, published by Statistics Bureau, Ministry of Internal Affairs and Communication)

2.2.2. Industrial trend Japan's industrial structure has undergone a major transformation in the half-century since the end of World War II. The industrial activities had gone high due to the growth of high technology industries. In the

[55] http:/en.wikipedia.org/wiki/economy-of-Japan

area of semiconductor, optical fibers, optoelectronics, optical media, facsimiles and copying machines, industrial robots and fermentation, Japan enjoys advantage of high technological development. By 1986 Japan started to spend higher proportion of its gross national production (GNP) or gross domestic production(GDP).it also changed its industrial base through technology licensing, patenting of the new inventions by making improvements in the foreign inventions including imitations. Looking at changes in the industrial structure in terms of industry share of employed persons and GDP over time from the tables given below, it has been observed that those in the primary industry in particular has fallen dramatically since 1970, when Japan experienced a long-standing rapid economic growth. During the 1980s, the secondary industry's share of employed persons and GDP also began to decline gradually. On the other hand, the tertiary industry's shares of both employed persons and GDP have risen consistently. In the year 2005 Gross Domestic Production (GDP) has accordingly increased from 503865.4 billion yen to 538,364.5 billion yen.

Changes in Industrial Structure

(%)

Year	Employed persons			Gross Domestic Product (GDP) [1)]		
	Primary industry	Secondary industry	Tertiary industry	Primary industry	Secondary industry	Tertiary industry
1950	48.5	21.8	29.6	-	-	-
1955	41.1	23.4	35.5	19.2	33.7	47.0
1960	32.7	29.1	38.2	12.8	40.8	46.4
1965	24.7	31.5	43.7	9.5	40.1	50.3
1970	19.3	34.0	46.6	5.9	43.1	50.9
1975	13.8	34.1	51.8	5.3	38.8	55.9
1980	10.9	33.6	55.4	# 3.5	# 36.5	# 60.0
1985	9.3	33.1	57.3	3.1	35.1	61.8
1990	7.1	33.3	59.0	2.4	35.7	61.8
1995	6.0	31.6	61.8	1.8	30.3	67.9
2000	5.0	29.5	64.3	1.3	28.4	70.2

(Source: Statistical Handbook of Japan 2006, published by Statistics Bureau, Ministry of Internal Affairs and Communication)

Gross Domestic Expenditure (Constant prices in 2000)

(Billion yen)

Item	2002	2003	2004	2005
Gross domestic expenditure = GDP	503,865.4	512,816.6	524,628.1	538,364.5
Domestic demand	497,101.7	502,867.0	510,610.0	523,080.4
Private demand	375,698.0	382,791.7	391,077.7	403,452.9
Private final consumption expenditure	289,743.8	291,357.7	296,981.9	303,157.2
Private Residential Investment	18,465.4	18,305.4	18,660.3	18,523.3
Private plant and equipment	68,877.8	72,932.5	76,493.2	82,355.0
Changes in inventories of private sector	-1,478.0	239.7	-948.6	-266.6
Public demand	121,396.2	120,097.6	119,570.6	119,686.2
Government final consumption expenditure	89,477.8	91,532.8	93,379.1	94,999.6
Gross capital formation by public sector	31,742.2	28,317.2	25,876.2	24,313.7
Changes in inventories of public sector	153.3	165.4	227.0	317.5
Net exports of goods and services	6,650.3	9,735.4	13,837.8	15,229.6
Exports of goods and services	55,447.3	60,448.4	68,845.7	73,675.7
(less) Imports of goods and services	48,797.0	50,713.1	55,007.9	58,446.1
(Reference)				
Trading gains/losses	-304.2	-1,640.0	-4,130.9	-8,499.2
Gross domestic income	503,561.2	511,176.6	520,497.2	529,865.3
Net income from the rest of the world	8,443.2	8,905.2	10,120.4	12,534.4
Incomes from the rest of the world	13,173.2	13,124.1	14,797.2	18,610.9
(less) Incomes to the rest of the world	4,730.0	4,218.9	4,676.8	6,076.5
Gross national income = GNI	512,004.4	520,081.8	530,617.6	542,399.7

(Source: Statistical Handbook of Japan 2006, published by Statistics Bureau, Ministry of Internal Affairs and Communication)

In 1970, the primary industry accounted for 17.4 percent of employed persons, the secondary industry for 35.2 percent, and the tertiary industry for 47.3 percent. In 2005, the corresponding shares of these three sectors were 4.4 percent, 27.0 percent and 67.4 percent, respectively. In terms of GDP by type of economic activity, in 1970, the primary, secondary and tertiary industries accounted for 5.9 percent, 43.1 percent and 50.9 percent, respectively. In 2004, these figures for the primary, secondary and tertiary industries were 1.6 percent, 26.5 percent, and 71.8 percent, respectively. In 2004, there were 5.73 million business establishments in Japan. These establishments employed a total of 52.07 million persons. The average number of employees per establishment was 9.1 persons. Large-scale business establishments employing 300 persons and over accounted for 0.2 percent of the total.

Numbers of Business Establishments [1] and Persons Engaged

	Number of establishments (1,000)		Persons engaged(1,000)	
	1999	2004	1999	2004
Total	6,203	5,728	53,807	52,067
By industry				
Primary industry				
Agriculture, forestry and fisheries	19	19	219	222
Secondary industry				
Mining	4	3	55	38
Construction	612	564	5,090	4,382
Manufacturing	681	576	11,274	9,940
Tertiary industry				
Electricity, gas, heat supply and water	4	3	215	189
Information and communications	47	54	1,230	1,382
Transport	142	130	2,917	2,822
Wholesale and retail trade	1,862	1,626	13,175	12,219
Finance and insurance	99	86	1,710	1,431
Real estate	323	316	950	966
Eating and drinking places, accommodations	884	803	4,917	4,817
Medical, health care and welfare	241	275	3,221	4,156
Education, learning support	162	164	1,257	1,368
Compound services	33	31	386	356
Services, N.E.C.	1,091	1,077	7,192	7,779
By type of legal organizations				
Individual proprietorships	3,243	2,859	8,828	8,094
Corporations	2,925	2,837	44,801	43,843
Companies	2,627	2,528	40,039	38,422
Unincorporated organizations	36	32	178	130
By number of employees				
1 - 4 persons	3,907	3,526	8,154	7,594
5 - 9 persons	1,161	1,099	7,531	7,151
10 - 29 persons	843	813	13,462	13,008
30 - 99 persons	239	230	11,710	11,335
100 - 299 persons	43	43	6,813	6,779
300 and over	9	10	6,137	6,200

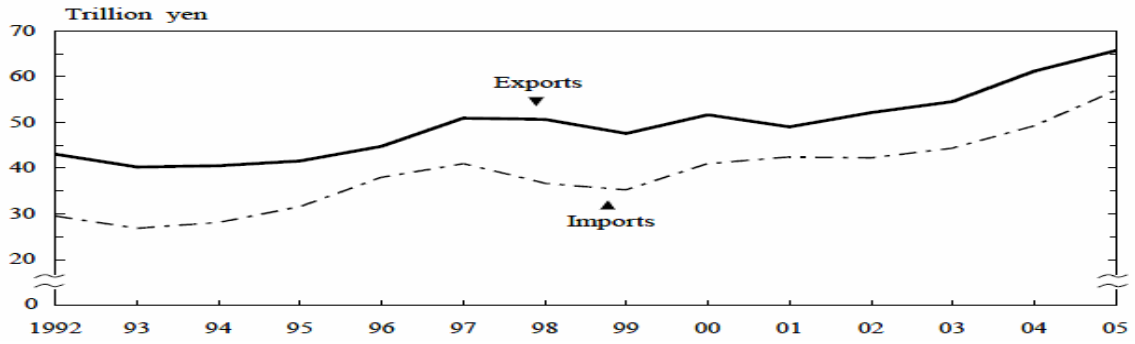
1) All the business establishments (excluding establishments owned by individuals in agriculture, forestry and fisheries) located in Japan

(Source: Statistical Handbook of Japan 2006, published by Statistics Bureau, Ministry of Internal Affairs and Communication)

2.2.3. Overview of Trade: Japan has continued to produce a trade surplus. Today total international trade of Japan is about 113trillion yen. In terms of international trade on a customs clearance basis in 2005, exports (FOB value) showed an annual increase of 7.3 percent to 65.66 trillion yen, marking the fourth consecutive year of increase. Imports (CIF value) grew by 15.7 percent to 56.95 trillion yen, thus increasing for the third consecutive year. As a result, Japan's trade surplus decreased for the first time in four years, falling by 27.2 percent from the previous year to 8.71 trillion yen[56]. Japan's international trade has been increasingly growing every year. This increasing trend has been shown below in the following graphical illustrations.

[56]Statistical Hand Book of Japan 2006,pp-120 available at http://www.stat.go.jp/english/data/handbook/pdf/c11cont.pdf

Foreign Trade



(Source: Statistical Handbook of Japan 2006, published by Statistics Bureau, Ministry of Internal Affairs and Communication)

Trends in Foreign Trade and Indices of Trade

Year	Value (billion yen) (Customs clearance basis)			Indices of trade (2000=100)					
				Exports			Imports		
	Exports (FOB)	Imports (CIF)	Balance	Value index	Quantum index 1)	Unit value index	Value index	Quantum index 1)	Unit value index
1996	44,731	37,993	6,738	86.6	81.1	106.8	92.8	85.4	108.7
1997	50,938	40,956	9,982	98.6	90.7	108.8	100.0	86.8	115.2
1998	50,645	36,654	13,991	98.0	89.5	109.6	89.5	82.2	108.9
1999	47,548	35,268	12,280	92.1	91.4	100.7	86.1	90.1	95.6
2000	51,654	40,938	10,716	100.0	100.0	100.0	100.0	100.0	100.0
2001	48,979	42,416	6,564	94.8	90.5	104.7	103.6	98.0	105.7
2002	52,109	42,228	9,881	100.9	97.7	103.2	103.1	100.0	103.2
2003	54,548	44,362	10,186	105.6	102.5	103.0	108.4	107.1	101.2
2004	61,170	49,217	11,953	118.4	113.4	104.4	120.2	114.6	104.9
2005	65,657	56,949	8,707	127.1	114.4	111.1	139.1	117.9	118.0

1) Quantum index = Value index / Unit value index

(Source: Statistical Handbook of Japan 2006, published by Statistics Bureau, Ministry of Internal Affairs and Communication)

2.2.4. Overview of Growth of Japanese Industries: ─ As a result of importation of foreign technologies to Japan, the Japanese companies started absorbing theses technologies by diffusing them according to their need and Japanese environment and requirements since they were spending huge amount of their income towards payment of royalty and license fees. These companies also started their independent research and development activities to improve upon the imported technologies. In fact after establishment of Japanese patent office in1885, the number of patent applications filed by Japanese nationals started growing at rapid speed. For instance, the number of patent applications filed by Japanese nationals were 1482 in 1887 but rose by 45% to 2142 in 1901 and 170% to 3975 in 1907 [57] .Accordingly, the importance of Research and Development was recognized as early as in1907 and therefore in order to promote Japanese own research capabilities for producing original inventions by Japanese, an

[57] History of Japanese Industrial Property System, published by the Patent Office,Japan,1996,pp-15

Institute of Physical and chemical Research was established under the initiatives of Dr.Jokichi Takamine who himself was a great scientist and responsible for many new inventions. After its foundation in 1917, the institute started playing a main role in Japan's physical and chemical research. The institute was able to produce not only many great scientists but also responsible for number of business to commercialize the research findings resulting into expansion to a total of 63 companies and 121 factories by 1936.[58]

The creation of new innovations and enhanced research and development activities resulted in growing the Japanese industries globally. Based on continued promotion of research and development, the Japanese industrialization has successfully taken three decade long strides after World War II. The introduction of foreign technology in the beginning of 1955 was the first step, improvement in the technology from 1965 was the second step which was also known as catch up time and development of independent technology and its exchange with foreign countries from 1975 was the third step. Today there are more than 3 million small scale industries apart from the big companies and Corporations. The growth of the Japanese industry is reflected by the increasingly growing export rate of Japan in the world trade and also by the fact that the Japanese companies have made a big presence in the world`s top Transnational Corporations on the basis of their assets due to continued persuasive research and development activities. The following companies are the top companies of Japan

Top companies of Japan within 100 companies of the world[59]

Corporation	**World ranking**	**Industry**	**No of affiliates**
Toyota Motor Corporation	62	Motor vehicle	129
Honda Motor Co Ltd	26	Motor vehicle	76
Nissan Motor Co Ltd	41	Motor vehicle	53
Mitsubishi Motors' Corporation	87	Motor vehicle	212
Sony Corporation	47	Electrical and electronics	395
Mitsui& Co Ltd	71	Whole sales	243
Matsushita Electric &Industrial Co.Ltd	82	Electrical and electronics	277

[58] Experience of Japan, published by Institute of Intellectual Property, 2001,pp-47
[59] This is based on fact sheet data provided in the World investment report 2006 available at http://www.unctad.org/wir.

Hitachi Ltd.	96	Electrical and electronics	385
Marubeni corporation	91	Whole sales	160

Apart from the above mentioned companies, there are other companies such as Toray international in the field of textile, Kobusho Kamaishi Works Nippon, Yawata Works, Sumitomo, Kobe steel in iron and steel, Toshiba, Panasonic, NTT, NEC Sharp CASIO Canon Nikon etc in electrical, electronics and communications, Nissan, Kawasaki, and Suzuki in automobiles are well known.

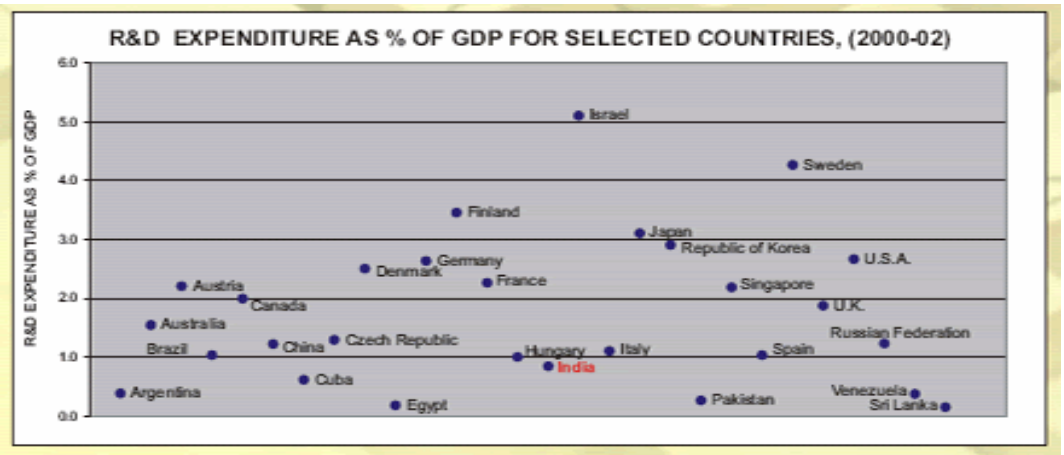
Case study of Toray Industries, Inc:—Toray industry (then Toyo Rayon) was established in the year 1926. Nylon 66 was invented by DuPont in 1935.however in 1941 Toray completed its basic research on nylon 6 and started building a small plant to produce nylon 6 and started manufacturing nylon product. In1951, Toray obtained a patent licensing agreement on nylon manufacturing technology from DuPont. The license fee was three million dollars (1.08 billion yen) in initial payment and three percent of sales upto five million pounds. The initial payment alone exceeded Toray`s paid in capital at the time. After initial losses, there was a 500 million yen of profit in 1953 itself. Thereafter company started its own research and development activities. Today Toray is a company of 96, 937, million yen capital having diversified their activities in the field of plastic and chemicals, information telecommunications related products, carbon fiber composite materials, environment related engineering products, life science and other businesses such as pharmaceuticals with 34,670 employees（6,595 toray,9,617 Japanese subsidiaries and 18,458 overseas）with net income of 93 billion yen. The Toray group of companies is consisting of about 238 companies in 20 countries and regions including Japan. In Japan itself there are 122 companies and rest 116 are overseas[60].since its establishment Toray adhered to research and development. As regards research and development activities, Toray has been continuously filing about 2000 patent applications domestically in Japan and about 700-800 applications overseas with the

[60]According to the Toray Group Corporate profile 2006

creation work of about over 4000 inventors and more than 2000 patents are in force every year. 2000 and 2001[61]

2.2.5. Intellectual Property creation culture:

(a) R&D expenditure: Intellectual property creation culture has been the back bone of Japanese industrial development for a long time. The investment in the research and development and education has not only helped Japan in its own innovation efforts but also helped in effective use of imported technology. Japan`s R&D expenditure relative to GNP had been high in the past upto1958 spending upto 0.97% of its GNP .However it was much lower than that of USA （ 2.4% ） ,UK （ 2.1% ） ,France and Canada(1.00%) and Germany （1.3）.This has been increased to 3.11% in the year 2000-02 just behind by Israel (5.11), Sweden (4.27) and Finland.

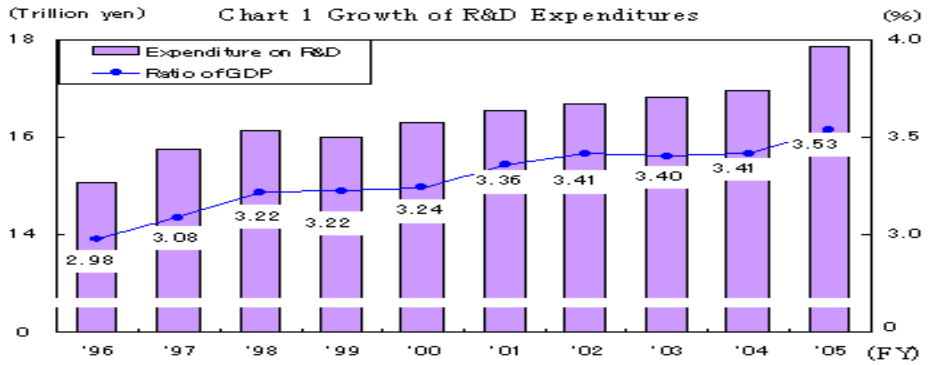


(Source: www.nstmis-dst.org)

During fiscal year (FY) 2005, Japan's total expenditure on R&D stood at 17,845 billion yen, showing an increase of 5.4% from the previous fiscal year. It is the highest figure and keeps on increasing for six years continuously. The ratio of R&D in terms of GDP was 3.53%, maintaining the highest rate in the past years. The main industries that expenditure on R&D for business enterprises increased were "Electronic parts and devices", an increase of 26.7%; "Drugs and medicines", an increase of 15.5%; and "Transportation equipment", an increase of 13.3%; compared with the previous fiscal year.[62]

[61] These figures are based on the presentation made on July 17, 2007 by Mr. Koichi Yonezawa, Intellectual Property Department Toray Industries, Inc. during study visit tour.

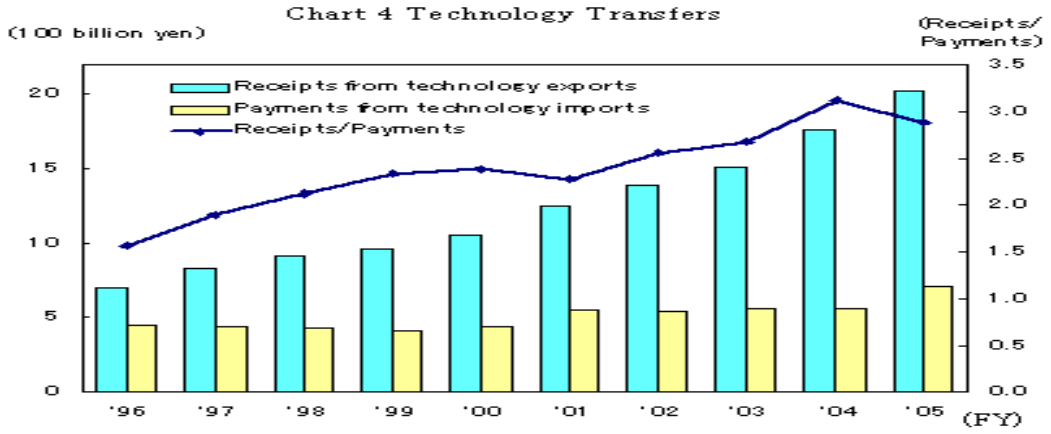
[62] Statistics of Bureau of Ministry of internal Affairs and Communication Japan , available at http://www.stat.go.jp/english/data/kagaku/1533.htm



(b) R&D personnel: As of 31 March 2006, researchers numbered 819,900, up 3.7% from the previous year. It is the highest figure in the past years and is increasing for five consecutive years. Female researchers were over a hundred thousand for the first time and accounted for 11.9%. It kept the highest rate for two years. However as of 31 March 2006, the number of supporting staffs for the researchers was 216,200, a decrease of 1.3% from the previous year[63].

(c)Technology Transfers*:* With regard to technology transfers by business enterprises, receipts for technology exports has reached 2,028 billion yen, which is a record figure and has been up by 14.6% from the previous fiscal year. Similarly, payments for technology imports has reached to 704 billion yen, which is also a record figure, and up by 24.0% from the previous fiscal year[64]. The major countries to which Japan exported its technologies are the U.S.A. with 775.4 billion yen (which accounted for 43.8 percent of total exports), followed by Canada with 170.5 billion yen, China with 130.7 billion yen, and Thailand with 103.3 billion yen[65].

[63] Ibid
[64] Ibid.
[65]Statistical Hand Book of Japan 2006,pp-95 available at http://www.stat.go.jp/english/data/handbook/pdf/c11cont.pdf

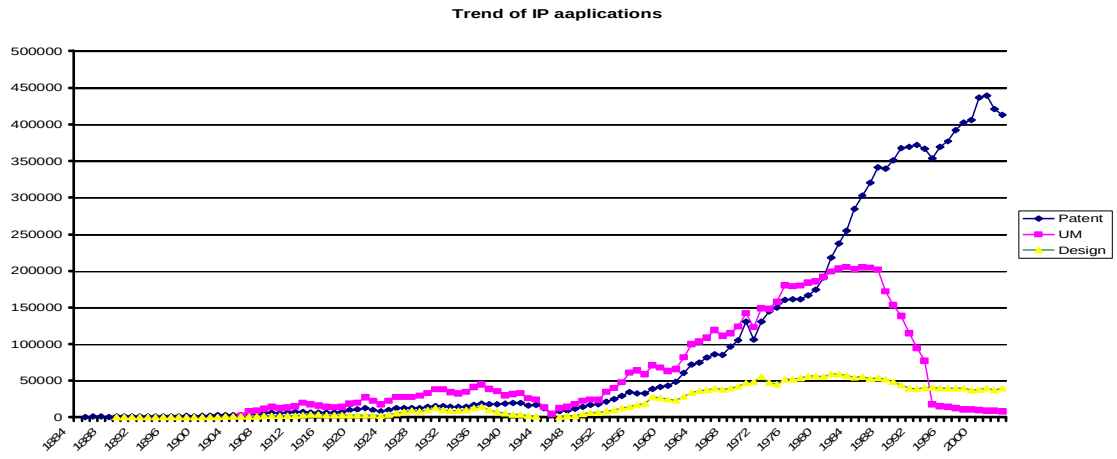


(d)Trend of intellectual property applications: In fact the establishment of Institute of Physical and chemical Research was a result of Japanese's desire to promote indigenous innovations and develop intellectual property creation culture. This can be seen from the fact that Japan patent office from its inception started receiving increasingly growing numbers of domestic patent applications and also utility model applications. The number of utility model applications filed in the year in which utility model law was introduced in Japan, also authenticated the intellectual property creation culture The details of patent and utility model applications of that time (from1900-1910) given below clearly suggested the intellectual property creation culture in Japan in the early stage of development as the number of patent and utility model applications filed by domestic applicants was more than 5to 6 times, which was much higher than the foreign applicants.

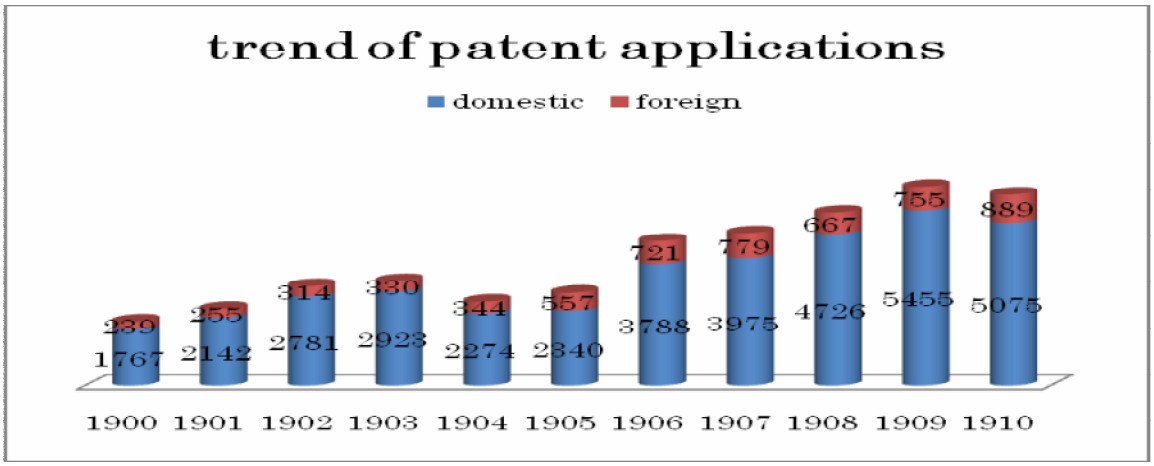
Details of patent applications and utility model applications filed by domestic and foreign applicants (1900-1910):

Year	Patent			Utility Model		
	Total	Domestic	Foreign	Total	Domestic	Foreign
1900	2006	1767	239			
1901	2397	2142	255			
1902	3095	2781	314			
1903	3253	2923	330			
1904	2618	2274	344			
1905	2897	2340	557	2011	2010	1
1906	4509	3788	721	7952	7949	3
1907	4754	3975	779	8862	8857	5
1908	5393	4726	667	11578	11570	8
1909	6210	5455	755	14057	14042	15
1910	5964	5075	889	12545	12538	7

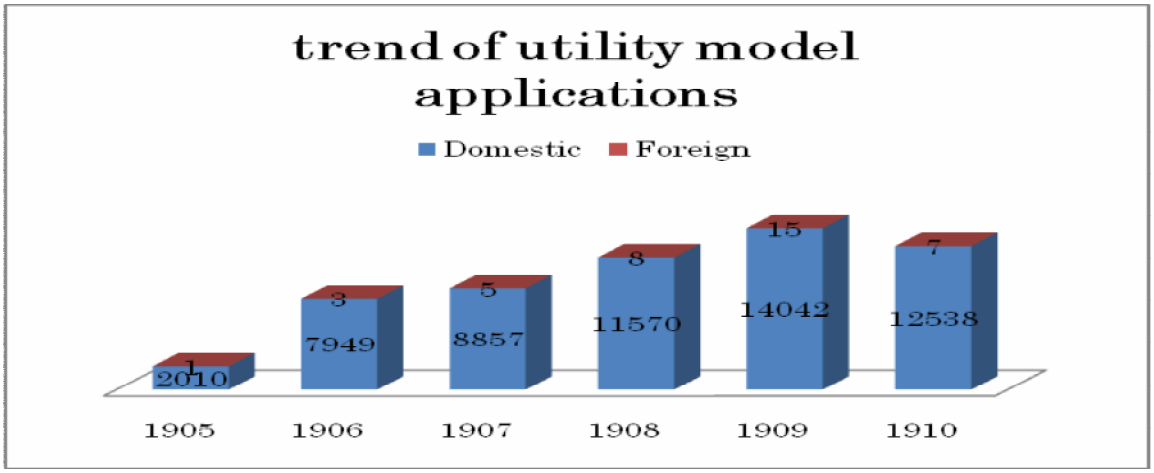
The following graphical presentation gives an idea about the trend of industrial property applications filed with Japan Patent Office.



The graphical presentation given below indicates the trend of patent applications from 1900 to 1910 filed by the domestic applicants as well as by foreign applicants. This shows the significant dominance of domestic applicants over foreign applicants.



The graphical presentation given below indicates the trend of utility model applications from 1905 to 1910 filed by the domestic applicants as well as by foreign applicants. This also shows the significant dominance of domestic applicants over foreign applicants.



(e) Top Japanese companies creating industrial property assets: The following the top Japanese compaies which are indicated in the table below ,are filing more than 1500 applications every year for the grant of patentsand and busy in the intellectual asset creation on the baisis of research and development activities.these companies are not only filing their applications just in japan but filing abroad in order to protect their inventions to prevent any competition.

Patent applications by top companies (in the Japan Patent Office).

Sl.No.	Name of applicant	No. of Applications		
		2004	2003	2002
1	MATSUSHITA	17.145	16.119	14.704
2	CANON	11.098	9.825	11.776
3	SEIKO EPSON CORPORATION	8.542	9.323	7.041
4	TOSHIBA CORPORATION	7.016	6.349	6.435
5	SONY CORPORATION	6.852	6.999	6.719
6	RICOH COMPANY LTD	6.415	7.371	7.992
7	FUJI FILM CORPORATION	6.315	5.525	7.213
8	TOYOTA MOTORS	6.110	5.003	3.563
9	SHARP	5.816	5.128	4.877
10	HITACHI,LTD	4.678	5.141	5.384
11	MITSUBISHI ELECTRIC	4.354	4.759	5.080
12	DENSO CORPORATION	4.231	3.820	3.942
13	FUJI XEROX CO LTD	4.167	2.564	1.903
14	NISSAN MOTORS CO. LTD	4.049	3.992	3.028
15	SANYO ELECTRIC CO.LTD	3.898	3.691	4.031
16	FUJITSU LIMITED	3.617	2.964	4.240
17	HONDA MOTORS CO.LTD	3.387	3.420	3.028
18	OLYMPUS	3.251	2.519	1.998
19	NEC CORPORATION	2.716	2.375	2.638
20	MATSUSHITA DENKO	2.491	2.471	2.576
21	MITSUBOSHI ELECTRIC.CO.LTD	2.389	1.747	1.199
22	KDDI	2.342	2.755	2.484
23	KYOTO CERAMIC	2.256	2.948	2.532
24	KYOSIRA	2.078	1.889	644
25	PHILLIPS	2.024	1.159	1.574
26	DAI NIPPON PRINTING CO.LTD	1.953	1.920	2.020
27	TDK	1.844	1.953	939
28	ARUZE	1.663	1.323	1.119
29	NIKON	1.611	1.622	1.229
30	BRIDGESTONE TYRES	1.589	968	1.221
31	NIHON SEIKO CORPORATION	1.574	1.373	1.526

(Source: Japan Patent Office website -www.jpo.go.jp)

(f) Design applications by Companies-The following are the top 20 Japanese companies which are filing most number of design applications with Japan patent office.

	APPLICANT	2002	2003	2004	2005	2006
1	**MATSUSHITA**	1,278	1,290	1,031	1,079	961
2	**OKAMURA**	322	338	314	352	428
3	**SANYO Electric**	578	670	590	434	417
4	**MATSUSHITA Electric**	408	422	396	398	392
5	**SHARP**	477	524	554	526	347
6	**TOSHIBA**	474	406	297	387	337
7	**MITSUBISHI Elect.**	424	304	286	272	246
8	**RINNAI**	74	91	222	210	243
9	**FUJI TRADING**	0	0	199	61	237
10	**SONY**	230	143	189	177	202
11	**HONDA**	228	171	266	248	192
12	**MIRAI INDUSINE**	154	236	177	235	174
13	**SANKYO PHARMA**	18	5	51	53	169
14	**SANKYO THATEYAMA ALUMINIUM**	178	133	141	207	160
15	**KOKUYO**	0	0	0	50	155
16	**ITOKI**	189	175	215	98	152
17	**INAX**	276	190	132	226	149
18	**CASIO**	128	116	138	135	141
19	**KUBOTA**	98	118	88	147	137
20	**HITACHI KOKI**	41	58	71	114	135

(Source: Japan Patent Office website -www.jpo.go.jp)

(g) Japanese Universities:-The following are top Ten Japanese Universities which filed most number of patent applications in 2005.

Table- Top 10 Universities of Japan[66]

Sl.No.	Name of the University	No of Patent applications
1.	Keio University	130
2.	Nihon University	120
3.	Kyoto University	92
4.	Tokai University	85
5.	Tokyo University	79
6.	Waseda University	70
7.	Tohoku University	53
8.	Nara Institute of Science and Technology	52
9.	Hiroshima University	49
10.	Tokyo University of Science	49

2.2.6 Historical development of utility model Law—In the early part of 20th century, the main industries in Japan were engaged in handicrafts work on miscellaneous small goods and the level of innovation activities was such that patent right would not have been obtained on these inventions due to lack of novelty and inventive step. However the contribution of such small inventions to the industrial development was very significantly important and therefore it

[66] The information provided by Toyo international Patent Attorney Office on July 18,2007

became necessary to protect them under some alternate independent system and accordingly the utility model protection law, based on the German utility law, was introduced from the year 1905 in order to protect small inventions.

The utility model system was another alternative intellectual property system for promotion and protection of technical innovations similar to the patent system, and responsibilities were allocated within the patent system according to the level of techniques concerned. Therefore, there was no major difference in the fundamental structure between the patent system and the utility model system, except for the distinction as to whether a subject was an invention to be materialized into a product and method or a device (small invention; “koan” in Japanese) to be materialized into an article, the term of rights, and the level of inventive steps. The term of utility model right was six years with basic term of three years and renewable for another three years.

This law was amended in 1909 along with the patent law. The law was again revised in 1916 and 1921 to extend the term for 10 years as the six years term was too short compared to patent with 25 years in order to promote and encourage further protection of small inventions. This law was further revised in 1959 to extend the term of protection upto 15 years along with some other provisions and also in 1965, 1970 and 1975 to adopt multiple claims and request examination system. This encouraged the tremendous increase in the utility model applications as compared to patents. This resulted in rapid growth in the utility model inventions as number of applications increased three times to reach 180,000 in 1975 as compared to about 60,000 in 1955. In fact the number of applications for utility model further increased to 200,000 in 1987, but due to development in the Japanese technological level, the number of utility model applications decreased to less than 100,000 in 1992.[67]

However as life cycle of products were decreasing due to due fast technological development as a result of progressed research and development activities, pendency in the examination of such applications in the patent office was increasing growing and resulting in to huge backlog of the unexamined applications. In addition to this, the utility model applications were being utilized only for short period of time. With this kind of development,

[67]Outlines of utility model system, published by JPO and JIII,2006,pp－37

it was thought to amend the further, which could protect the technology within short period of time in order to exploit the technology at early stage of development. Accordingly in 1993, the utility model law was overhauled and revised thoroughly which not only reduced the term of protection up to six years but also dispense with the system of substantive examination. Therefore the registration of utility model rights was made possible only on the basis of formality check examination. Apart from these changes some other provisions such as registerability report, trial invalidation proceedings, and amendment procedure were also made.

Since, the utility model law was revised in 1993 in order to provide early protection enabling the innovators to have prompt registration without any substantive examination at one hand and providing an opportunity to third party to challenge the validity of the registration by filing a request for technical opinion on the registerability at the other hand. However, the number of applications for utility model as compared to patents and designs came down drastically to slightly more than 8000 in 2002.The decrease in the utility model applications was also due to the fact that industrial development grew rapidly resulting into inventions with higher standard and leveled the technological gap between the west and Japan due to which applications for patent started growing rapidly. Therefore in order to make it more attractive, the law was once again amended in 2004.These amendment provided the extension of term of protection for ten years from 6 years, filing of patent application based on utility model application and vice a versa, and scope of amendment and corrections in the claims, etc. The current amendment came into force with effect from April, 1, 2005.

2.2.7 Influencing factors for adoption of utility model: The technology gap between Japan and western countries was very wide in the beginning of 20th century. Where most Japanese inventions were related to daily commodities, the foreign applicants used to file applications for advanced technologies as grant of patent rights were also extended to them. Since the examination of patent applications for the grant of patent was very strict particularly for novelty and inventive step, the foreign applicants were able to obtain patent for their inventions due to high technological level. Due to this there were few patents being granted to Japanese as the technical standard of their

applications was much lower compared to foreign applicants. This resulted in large number of rejection of patent applications filed by Japanese inventors and therefore the Japanese inventors were also discouraged as it was impossible for them to protect the small invention under patent law. As a result, a strong need for protecting such inventions which had lower level of technical standard was felt as these kinds of small inventions also contributed to industrial development significantly and accordingly utility model law was enacted in 1905 to protect the Japanese petty inventions, which fit Japan's industry structure and its creative spirit.

2.2.8 Utilization of utility model by Japanese industries: The filing of utility model applications mainly by domestic applicants where foreigners had filed only five to fifteen applications per year, in the past at the beginning, indicated achievement of its primary objective of promoting indigenous inventive activities. The utility model law continued to support the Japanese light industries until the start of full scale heavy industry; In fact the utility models are developed by the employees working on the actual business site remedying the inconvenience of daily life. Therefore the concept of protecting such small ideas became very popular among the companies by providing incentive to such employees served as a source of corporate vitality. In fact technology diffusion through utility model system had a positive impact on Japan's post war productivity growth[68]. In fact, the system was designed to encourage, incremental and adaptive innovations and early disclosure became very important source of technical change and information diffusion in Japan[69]. The utility model protection law therefore has been fully utilized by Japanese companies until Japanese's technology became so advanced and gap between Japanese and western technologies disappeared. This is fully supported by the fact that since then number of applications for the grant of patents has been continuously and rapidly increasing as compared to utility models.

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[68] Keith E. Maskus and Christine McDaniel, Department of Economics, University of Colorado, Impact of the Japanese Patent System on Productivity Growth, Working paper No.999-01, December 1998,pp-21 available on website of University of Colorado at http://www.colorado.edu/Economics/CEA/papers98/wp98-29.pdf last visited on August 27,2007

[69] Keith E. Maskus, Intellectual Property Rights and Economic Development,2000,pp-479,available at www.law.case.edu/student_life/journals/jil/32-3/maskusarticle.pdf,last visited on August,27,2007

CHAPTER-III

EXISTING UTILITY MODEL LAW IN JAPAN

3.1 Substantive provisions in the law and regulations: As mentioned in Chapter-II, the utility model law came into existence in Japan from the year 1905.Since then, this law has been amended several times. However the major amendments were made in 1994. The main objective of the law is to encourage devices by promoting the protection and utilization of devices relating to the shape or construction of articles or a combination of articles so as to contribute to the development of industry[70]. The law currently in force was last amended in 2004.The main provisions of the current law are as follows;

(a) Registerable subject matter-Under Japanese utility law, any device which is industrially applicable and relates to the shape or construction of articles or combination of articles may be protected by utility model registration provided such devices (a)are not publicly known or publicly worked in Japan or elsewhere prior to the filing of the utility model application,(b) such devices are not described in a distributed publication or made available to the public through electric telecommunication lines in Japan or elsewhere prior to the filing of the utility model application. However, where a device could easily have been made, prior to the filing of the utility model application, by a person with ordinary skill in the art to which the device pertains, on the basis of a device or devices referred to above, utility model registration shall not be made or effected.[71]Therefore under the law, **only devices** but not the processes or substances are protectable. The device has been defined as creation of technical ideas by which law of nature is utilized[72]. Accordingly, the device in order to be registerable as utility model should be novel and involve inventive step to the extent that in view of prior art by way of prior publication, prior public knowledge or prior public working, the device could not have been made easily by a person having ordinary skill in art. The provisions of section 3bis(3-2) also provides that, if the utility model device as

[70] Section 1 of utility model law
[71] Section 3(1 & 2)
[72] Section 2

claimed in a utility model application is identical to the device or invention disclosed in the description or claimed in another utility model application or patent application in a foreign language which was filed prior to the utility model application and published in utility model gazette or the patent gazette after the filing of the utility model application, utility model registration shall not be effected notwithstanding the fact that such utility model meets the requirement of the provisions of section 3(1) of the law. However if the applicant for the utility model application and other application for utility model registration or application for patent are same, this provision is not applicable.

(b) Non- registerable devices- the provision of section 4 prohibits from the protection the devices which are liable to contravene public order, morality or public health as subject matter of utility model registration.

(c) Grace period:-There are provisions under section 11(1) of utility model law read with provisions of section 30 of the patent law, provide a grace period of six months to file the application for utility model even after publication of the invention after its publication under certain circumstances.

(d) Examination-The substantive examination of utility model application was dispense with by the amendment made in the year 1993.Therefore utility model law now does not provide a system of request for substantive examination for applications for utility model registration as to whether the device is novel and involves an inventive step. However the examination will be conducted for the basic requirements as mentioned below in addition to the conventional formality checks.

- As to whether the device relates to the shape or construction of articles or a combination of articles.
- As to whether the claimed device is not liable to contravene public order and morality.
- As to whether the application satisfies the requirements for the format of claim as well as the unity of application.
- As to whether the all the necessary items are described in the specifications and drawings, and these descriptions are not conspicuously unclear

(e) Term of protection- The utility models are protected for a term of ten years from the date of filing of the utility model application under section 15 of

the Act. However, prior to the amendment in 2004, the term of utility model rights was only six years.

(f) First to file rule-Like patent, utility model law also follows the first to file principle. Accordingly, if two or more utility model applications are filed for same device on different dates, the applicant who has filed first has a right to obtain utility model registration. However, in case the applications for same device are filed on same date, none of the applicants is entitled to obtain utility model right registration. Where a device claimed in utility model is same as an invention claimed in the patent application and applications are filed on different dates, utility model rights may be granted only when the application for utility model is filed before the patent application.[73]

(g) Priority rights-Provisions of section 8 provides for the priority rights within one year from the earlier utility model application or patent application filed abroad. Similarly provisions of section 48ter (48-3) provides for the priority right based on the international application under PCT.

(g)Rights of the owner of utility model-The owner of the utility model right after registration is entitled to have an exclusive right to commercially work the registered utility model. However in case the right holder has granted an exclusive license to the licensee, only exclusive licensee possesses the right to work the registered utility model[74].

(i)Technical Opinion-In case of infringement, the owner of the utility model right or exclusive licensee may not exercise his right or exclusive rights against an infringer until he has given warning in the form of a report of a technical opinion as to registerability of utility model[75].Accordingly, any person can make a request to the commissioner of Patent Office under section 12(1) for a technical opinion as to the registerability of a claimed device in registered utility model or utility model application and under section 12(2) even for extinguished utility model rights. There has to be separate request for each claim. However, no request for technical opinion can be made in case the utility model rights are invalidated in a utility model invalidation trial and also in case patent application has been filed on the basis of registered utility

[73] Section 4

[74] Section 16

[75] Section29^{bis}(29-2)

model.[76] If the utility model right owner or exclusive licensee takes action against infringer in order to exercise his rights with respect to a utility model registration invalidated by a final and conclusive trial court decision without any technical opinion as to registerability, he shall be liable for any damage caused to the other party[77].

(j) No Dual protection- Under the provisions of section 7, as discussed above, no dual application is permitted for utility model as well as for patent.

(k) Conversion of the application-Under the provisions of section 10, the applicant for patent may convert his application into a utility model application within five years and half months from the filing date of patent application or within 30 days from the date of transmittal of examiners first decision that application for patent is to be refused. An applicant for design registration can also convert his application into utility model application within five years and half months from the filing date of design application or within 30 days from the date of transmittal of examiners first decision that application for design is to be refused. When a patent or design application has been converted in to utility model application, such patent or design application shall be deemed to have been withdrawn.[78] Similarly a utility model application can also be converted into a patent application within three years from the date of filing of the application for utility model registration within 30 days from the date of transmittal of examiners first decision that application for utility model registration is to be refused and on conversion of such utility model application shall be deemed to have been withdrawn[79].This conversion also includes the conversion of the registered utility models. However said conversion of application for utility model registration or registered utility model into paten application is subject to the condition prescribed under section 46bis(46-2) of the patent law.

(l) Invalidation proceedings-Section 37provides a trial procedure for invalidation of registered utility model or even for the extinguished utility models. The request for trial can be made by any person on the grounds mentioned below. However in case, where utility model registration has been

[76] Section 12(2-3)
[77] Section29^{ter}(29-3)
[78] Section 10(5)
[79] Section 46 of the Japanese Patent law

effected contrary to the provisions of section 25 of the patent law, only interested person can make a request for invalidation trial. The request for invalidation trial has to be made separately for each claim if the registered utility model has two or more claims. The following are the grounds for the invalidation trial.

(i) Where registration of utility model has been effected with amendments which do not comply with the amendment requirements

(ii) Where registration has been effected contrary to registerability conditions, violation of public policy, violation of first to file rule, etc.

(iii) Where registration of utility model has been effected contrary to the provisions of a treaty.

(iv) Where registration of utility model has been effected in respect of the specification, which does not provide sufficient description to enable a person skilled in the art to carry out the device.

(v) Where utility model has been registered in respect of application filed by a person who is not a creator and has not succeeded to the right to obtain s utility model registration for the device concerned.

(vi where ,after registration, the owner of the utility model right has become a person who can no longer complies with a treaty

(vii) Where the correction to the description, claims or drawings in respect of a request for the registration of utility model has been effected against the provisions related to invitation to amendments.

(m) Amendments and Corrections -Section 2^{bis} (2-2) permits the applicant to amend the description or the claims for the utility model registration or drawings or abstract while the application for utility model registration is pending before Japan Patent Office but not after the time limit set by Cabinet Order which permits the amendment within two months from the filing date of the application. However such amendments shall be within the scope of the originally disclosed features disclosed in the description, claims, drawings or abstract. The correction in the description or the claims for the utility model registration or drawings is also permitted after registration of utility model but only once within a period of two months from the date when the first report of a technical opinion as to registerability of the utility model was transmitted or within a period prescribed to submit the written reply in the trial proceedings.

The correction under trial proceeding is limited only to restrict the claim for utility model registration, correction of clerical errors in the expression or a clarification of an ambiguous expression.

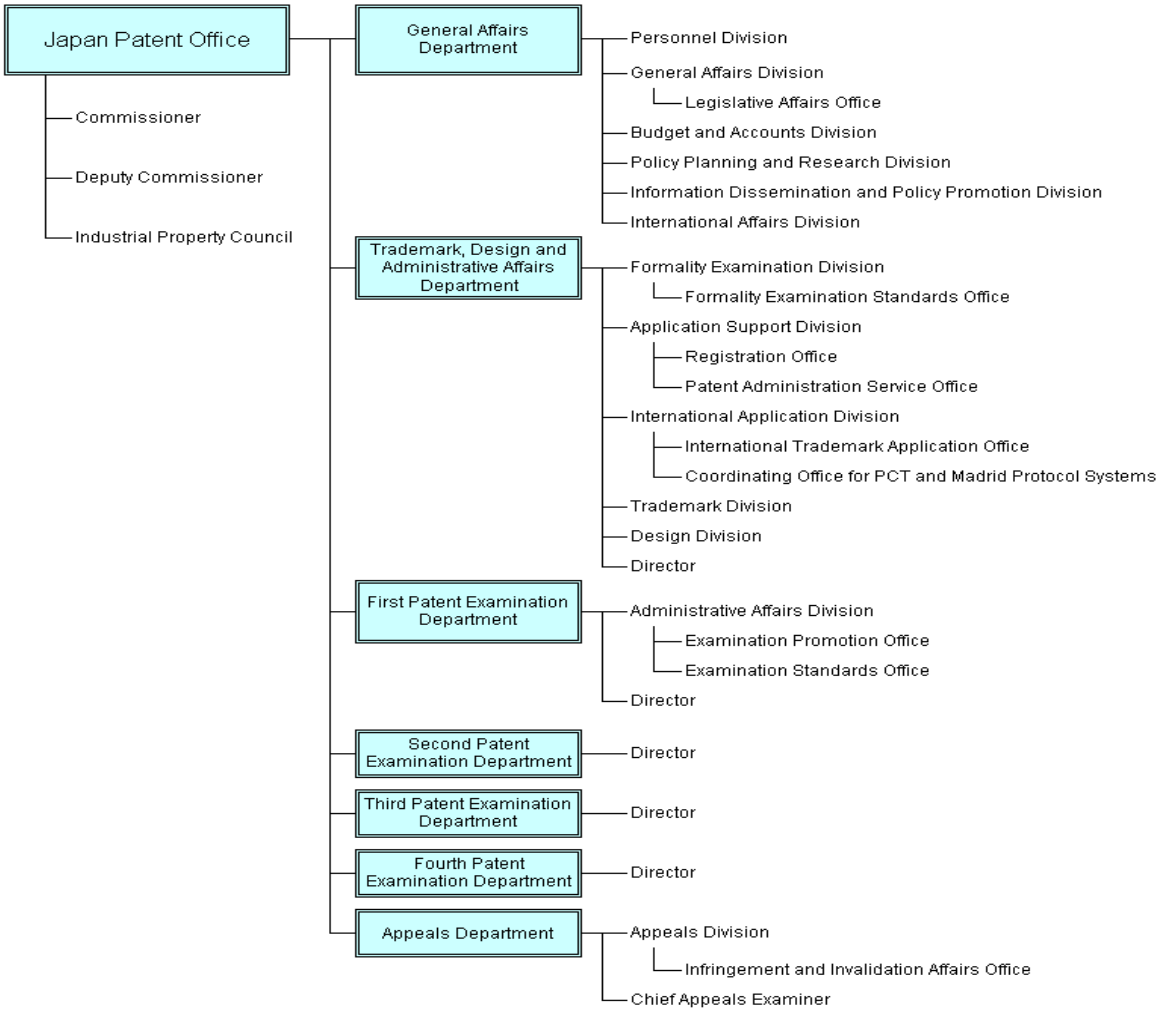
(**n) Infringement-**Section 27 provides that incase of infringement, the utility model right holder or exclusive licensee may demand an injunction to discontinue or refrain from such infringement, destruction of articles or removal of facilities used for such infringement. The provisions of section 29 also provides for compensations for damaged caused. However such infringement proceedings are subject to the provisions of sections 28, 29, 29^{bis}(29-2) and 29^{ter}(29-3).

(o)Penal Provisions:-The Chapter IX of the utility model law prescribed some penal provisions for the offences such as infringement, fraud, false marking, perjury, divulging secrets, secrecy order, etc. The provisions of section 61 provide for dual penal liability for the person committed an offence under the provisions of utility model law and the legal entity represented by such person.

(p) Harmonization with the provisions of Patent Cooperation Treaty: The provisions of Chapter VII harmonies with the provision under Patent Cooperation Treaty (PCT) such as provisions related to priority, submission of translation, submission of documents including drawing, invitation to correction and amendments, etc.

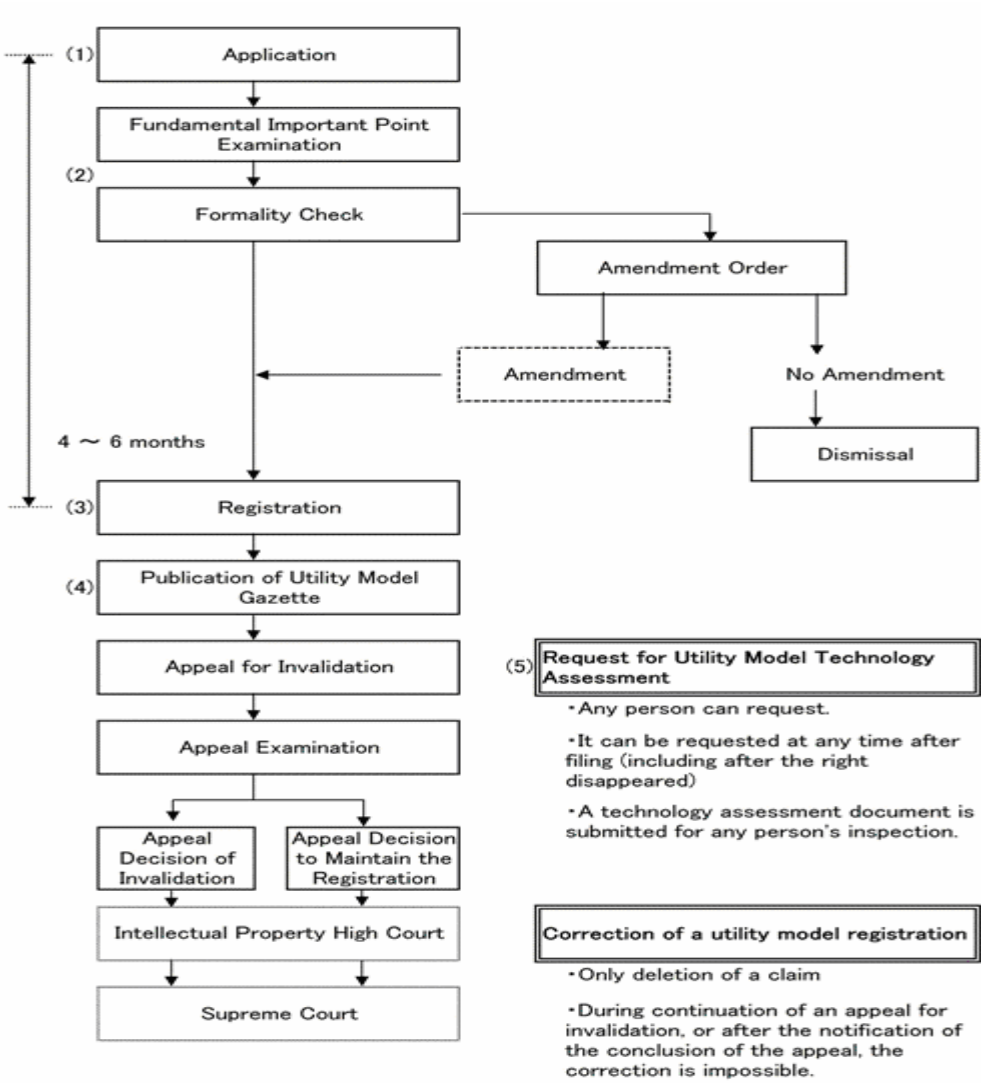
(q) Publication of Utility Model Gazette- When the utility model rights have been registered, the details as prescribed under section 14(3) of the utility model law, in respect of the registered utility model shall be published in the official gazette to lay it open to the public as the first publication.

3.2 Organization Structure of JPO:-The following flow chart illustrates the structure of the Japan Patent Office.



3.3 Registration procedure

. The flowchart below shows the process from application to publication and invalidation[80].



1. Application-While filing the application for the utility model registration, the applicant must meet the requirements of provisions of section 5 of the utility law such as request, description, drawings, abstract, title of the device, brief explanation of drawing and detail explanation about the device. In addition to the application fee, registration fee for the first three years must be paid at the time of filing.

2. Examination-, According to the utility model application examination guidelines of Japan Patent Office[81] the examination is conducted only for the basic requirements as mentioned above, in addition to the conventional

[80] Available at Japan Patent Office website -www.jpo.go.jp

[81] Examination Guidelines for Patent and Utility Model" released on December 28, 2000 are available at http://www.jpo.go.jp/quick_e/index_tokkyo.htm

formality check. In case where the application does not meet the formality requirements or the basic requirements, an invitation to amend is issued. If there is no response to this invitation, the application is dismissed.

3. Registration-For all applications which have passed the formality check as well as satisfying the basic requirements, the registration of the utility model rights is made, without going through a substantive examination. However, as mentioned above, the registration fee for the first to third years must be paid at the time of filing. After registration of rights, the details of claimed device are published in the gazette for public.

4. Request for Registerability Report-, After receipt of the request of for technical opinion as to registerability, the report is prepared by an examiner on the basis of a search conducted in the prior art documents, This registerability report enables an objective judgment to be made about the validity of registered utility model right. This kind of request can be made by any person at anytime after the filing of the application. Since utility model rights are registered without a substantive examination, it is up to applicant to make a decision as to whether he should file an application on the basis of a thorough prior art search or not.

For further details, In addition to above, detailed guidelines are available at Japan Patent Office website in respect of examination, basic requirement for registration, establishment of Report of Technical Opinion as to Registrability of Utility Model, and definitions of certain words, etc.

3.4. Empirical analysis of utility model applications:

3.4.1Patent Applications vs. Utility Model Applications:

(a) From 1980 to 1993: The number of applications for the grant of utility model filed prior to 1980 always surpassed the number of applications filed for the grant of patent. This is mainly, probably due to the fact that up to that period, Japan continued to use mainly the imported technologies and companies using such technologies were engaged in small innovation activities resulting into petty and useful modifications. As these modifications were not good enough for the grant of patent due to stringent requirement of novelty and inventive step criteria, however were good for the utility model registration. Secondly the registration of utility model rights was based on the substantive examination which provided more strong and authentic rights.

However for the first time in1981, the number of utility model registration applications was less than the number of patent applications for the since the establishment of the utility model system. One of the reasons for this decrease was the revision in the utility mode in the year 1975 which allowed the multiple claim system. This system allows the examiner to easily give reasons for the rejection for respective claims[82]. This trend of decrease in the utility model applications continued up to 1993 when number of utility model application was around 77000 as compared to previous year 1992 when number of application was 94601.This trend reflected that, the growth in utility model registration applications has been gradually slowing down as the technical level of Japanese industry improved following the high-growth era and as a result the number of patent applications has continued to increase.

Details of IP Applications from 1980-1993

	Patents	Designs	Utility Models
1980	191020	55,631	191785
1981	218261	59301	198979
1982	237513	59390	202706
1983	254956	57618	205243
1984	284767	54683	202181
1985	302995	55237	204815
1986	320089	52636	204210
1987	341095	54017	201614
1988	339399	51936	171656
1989	351207	48596	153277
1990	367590	44290	138294
1991	369396	40134	114687
1992	371894	39170	94601
1993	366486	40759	77101

(b) From 1994 to 2006: The trend of decrease in the number of applications for utility model which started from 1981 to 1993 further continued. As a result, the number of utility model registration applications dropped drastically in 1994 just to17531 from 77101 in 1993.This dramatic drop has been mainly due to two reasons.(1) Due to the drastic amendments of the Patent Law in 1994, which dispense with the system of substantive examination and carrying out the registration only on the basis of formality check examination in order to accelerate the examination as Japanese Patent Office was facing huge back log of applications waiting for the examination. The amendment made in 1994 also reduced the term of utility model from 15 years from the

[82] Outlines of Utility model System published by JPO and APIC in 2006,pp-29

date of filing to just 6 considering that the product lifecycle was expected to become even shorter. However this period appeared to the applicants too short to commercialize any new technology. As a result, the applicants lost the interest in the utility model registration. The discontinuation of substantive examination also reduced the confidence level of the applicant as the registration of utility model rights only on the basis of formality check examination does not guarantee the strong rights and as a result it would be very difficult for them to protect their rights against the infringers[83].However in order to restore the confidence of the innovators and applicants and also to provide early protection, the Japan Patent office has further mended the utility model law in 2005,where the term of utility model rights has been further increased form 6 years to 10 years. The amendments also allow the applicant to file patent application even after registration of the utility model rights. There has been some flexibility in the amendment procedure and scope.

Details of IP Applications from 1994-2006

	Patents	Designs	Utility Models
1994	353301	40534	17531
1995	369215	40067	14886
1996	376615	40192	14082
1997	391572	39865	12048
1998	401932	39352	10917
1999	405655	37368	10283
2000	436865	38496	9587
2001	439175	39423	8806
2002	421044	37230	8603
2003	413092	39267	8169
2004	423081	40756	7986
2005	427078	39254	11387
2006	408,674	36,724	10,965

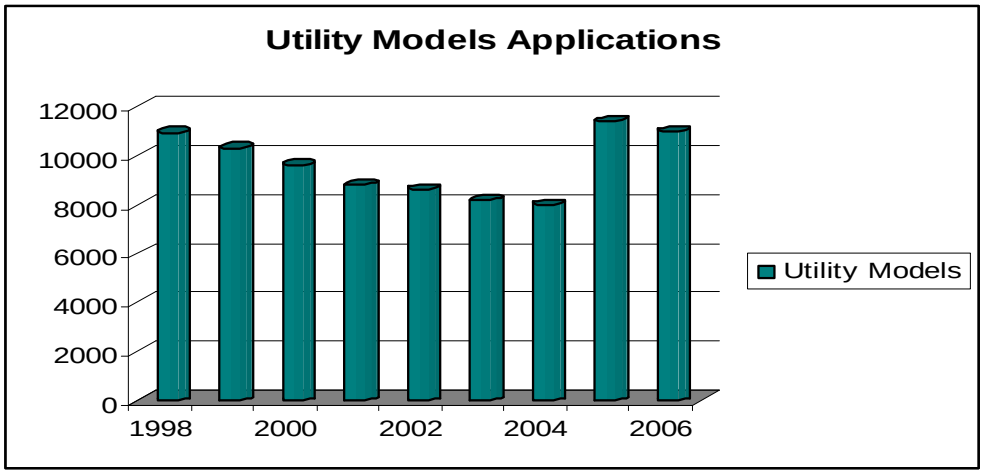
3.4.2.Industrial Design Applications vs Utility Model Applications: The utility model applications also dominated the number of Design applications until 1993.The number of design application in 1993 were only 40759 as compared to utility model applications which were 77101.However in 1994,the utility model applications were just reduced to two and half times less to design applications and this trend is continuing till today probably for the same reasons as applicable and mentioned with respect to patent applications.

[83] These conclusions and reasons are based on the discussion with IP Attorneys in Japan.

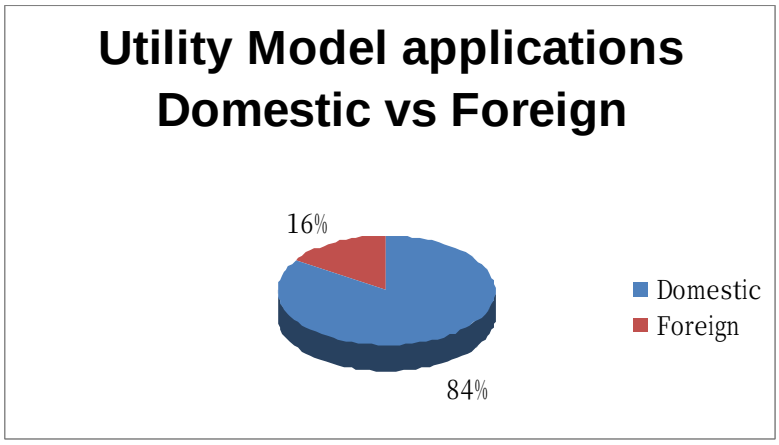
3.4.3 Correlation between Utility Model applications and technical development: Although, there is no evidentiary proof to show that utility model has any relationship with technological and economical development of Japan but trend in growing number of utility applications from the time when utility law was established in 1905 to 1981 provides some indications. It may be observed that during this period, there had been tremendous technological progress in Japan which was mainly dependent on the imported technologies but now has become the technology exporter. It was in this period when Japan economy was growing at very high rate and was commonly referred as `bubble economy`. Since the technological up-gradation made by Japanese innovators was of the nature which could not have been protected under patent law, the utility model law was fully utilized to protect such petty and small but utility modifications. Therefore it can be inferred that utility model protection has played a very important role in the economic as well as technological development of Japan. Although today the number of applications for utility models have been very low as compared to patent and design, the people are not in favour of discontinuing or abolishing the system all together, particularly the small and medium sized (SMEs) industries on the ground that(a)the Utility Model Law is a law which still remained significant and indispensable for the protection and development of businesses, particularly small and medium-size companies,(b)as a petty invention is protected under the patent laws in other countries, denying a petty invention protection will lead to weaken the international competitiveness of the countries,(c)if the companies are troubled by utility model rights, they are incorrectly executing their rights and(d)if the Utility Model Law is abolished, it will cause applications otherwise filed as utility model application to be filed as patent applications.[84] The Working Group constituted for the reforms in the utility model law in 1994 also favoured the continuation of the system. In its report, January 2004 on `Enhancement of Attraction of Utility Model System` recommended that although, the number of applications under the new utility model system, fell unexpectedly, the utility model system, however, should be maintained, as it is still necessary to provide early protection to some techniques, and there is still demand for the utility model system in view of its

[84] Outlines of Utility model System published by JPO and APIC in 2006,pp-34

effectiveness. However, the utility model system should be improved, with due consideration of the criticism that the system is difficult to exploit. The new utility model system should be maintained to meet the demand to protect technology that requires early exploitation and should be amended to enhance its attractiveness based on the advice received and to prevent the abuse of rights registered[85].The graphical presentation given below indicates that, although the number of applications for utility models currently maintaining a growth around 10, 000 applications a year, but if the necessary measures are further taken to promote the system, the filing rate would start increasing in future.



3.4.4 Trend of filing by domestic applicants:- The trend as given in the graphical figure indicates that, the utility model applications are mostly filed by the domestic applicants. The average filing in last ten years indicates that 84% applications are filed by domestic and 16% by foreign applicants only.



[85] The report of working group for reforms in the utility model of January 2004 on `Enhancement of Attraction of Utility Model System` available on Japan Patent Office website at www.jpo.go.jp

CHAPTER-IV

UTILITY MODEL AND DEVELOPED COUNTRIES

4.1. BACKGROUND:-. The protection of small innovations through a second tier of protection system in the form of utility models or petty patents or innovation patents, short term patent, utility model certificates, etc is being followed by many developed countries including many European countries such as Germany, Denmark, France, Italy, Netherlands, Finland, Spain, Portugal etc. However some important European countries such as United Kingdome, Sweden, and Luxemburg still do not have this kind of system and continuing to protect the small innovations under patent and design law.

In fact, the United State, which is one of the largest producers of intellectual property, also does not have utility law system to protect the small innovations. One of the possible reasons could be that in the United States, most of the innovations are originated from the large corporations which have a very high level of competition among them and therefore would like to protect their such innovations under patent law which provides a very wide protection rather than utility model or industrial design. Secondly, since the United States patent law provides for protection to everything under the sun made by man, no need yet felt for having such kind of a system. Thirdly, the United States has more concerns to protect the intellectual Property of its innovators overseas rather than in its own jurisdiction. However, in its law, apart from patent, the inventions are also protected as design patent.

As far as Europe is concerned, the European patent office does not provide for yet any protection to the small inventions as utility models, although, as stated above, some European countries are providing utility model protection in one form or other. However, in 1995, the European Commission launched a wide-ranging consultation exercise on the need for Community action on utility models by means of a Green Paper on the Protection of Utility Models and accordingly submitted the proposal for European Parliament and Council Directive approximating the legal arrangements for the protection of inventions by Utility Models in1997 in order to provide an instrument such as utility model protection system to technical

inventions involving a specific level of inventiveness which is cheap, fast and easy to evaluate and apply as means of increasing the competitiveness of Community industry in the field of research and development by considering the strategic role played by small and medium sized firms in relation to innovation and rapid response to market requirements;

The commission came to the conclusion that the utility model is an independent instrument of competitiveness at the service of firms, in particular SMEs, helping to safeguard or improve their market position and facilitate the economic and commercial exploitation of technical inventions[86] However, the proposal contains a list of exclusions from protectability comprising *inter alia* biological material, chemical or pharmaceutical substances or processes and computer programs in order to limit the lack of legal certainty due to the granting of too many rights without any preliminary examination to establish novelty and

inventive step[87].This proposal however was withdrawn after wide range of consultations and inviting the comments from the member states as well as other Organisations but the proposals were interesting to understand the ideas of European commission. For the purpose of this research study, the utility model system of developed countries, the systems prevailing in Germany and Australia and proposal of the European Commission are being reviewed.

4.2 GERMANY

4.2.1 Historical development of utility model law:-Industrialization in Germany was rapidly growing in late nineteenth century and new technologies were being developed by innovative activities. However, the courts in Germany refused to recognize the industrial property rights to the industrial property creators. This led to take various measures to protect such industrial property rights. Accordingly, the Patent Law was enacted in 1877. However, the Federal German Court held that the inventions having lower level of inventiveness and made for utility purpose are not patentable under the patent

[86] Proposal for a EUROPEAN PARLIAMENT AND COUNCIL DIRECTIVE approximating the legal arrangements for the protection of inventions by utility model, pp-17,vailable at http://ec.europa.eu/internal_market/indprop/docs/model/util_en.pdf
[87] Ibid,pp21

law. Therefore German Patent office did not grant any patent for low technology oriented inventions due to the strict requirement of inventiveness under the patent law. Therefore most of the SMEs started protecting their utility oriented inventions under Design Law but this was also hampered by the Imperial Higher Commercial Court's Decision that the design law was intended only to protect the form of products[88]. Keeping in view the need for protecting such utility oriented inventions having lower level of inventiveness the Association of German Engineers demanded the establishment of law to protect such inventions. As result, the utility model protection law was established in the year 1891 to provide protection to such inventions which had low level of inventiveness .This was perhaps first independent law of its kind. This law was introduced with provisions relating to non- substantive examination system and shorter period of protection and three dimensional requirements. This law had provisions to prevent third party from copying the external pattern, design or configuration of hand tools, devices or articles or daily life implements which had short inventive height than what was required for patents due to the strict requirement of inventiveness under the patent law. Thus, the classic utility model regime was originally conceived as a form of design protection[89].The law was amended several times enabling German industries to take full advantage by utilizing it to the fullest extent. However, prior to 1987,the utility model protection was limited to implements or articles of daily use or parts thereof in as far as they are intended to serve their purpose as tools or their functional purpose by means of new configuration, arrangement or device[90].The utility model protection law was again amended in 1990 and lastly in 2005.

4.2.2 Existing law and regulations:-The existing Utility model law in Germany, which is in force, was last amended in 2005 by the law of 21January 2005[91].This law protects any invention of technical character which

[88] Modalities of Future Utility Model System, by Takeyuki Iwai, IIP Bulletin 2004,pp39
[89] Utility Models and Innovation in Developing Countries, issue Paper No.13,by Uma Suthersanen,2006,pp-15
[90] The Protection of Technical innovations and Designs in Germany,VCH Law Books publication,1993.pp125
[91] According to the information for utility Model applicants available at German Patent and Trademarks office website,http://www.dpma.de/formulare/g6181_1.pdf last visited on August,28,2007

is new, involve inventive step and is industrially applicable. The following are the main features of the German Utility Model law[92].

(a) Protectable subject matter: According to Article 1(1), Utility model protection shall be afforded to inventions that are new, involve an inventive step and are susceptible of industrial application. The invention for the protection of utility model shall be considered to be new if it does not form part of the state of the art[93]. The state of the art has been defined to comprise any knowledge made available to the public by means of a written description or by use within the territory of Germany before the date relevant for the priority of the application. Therefore as far as novelty with respect to public use or public knowledge is concerned, it is considered on the basis of use within Germany only**(local novelty)** and not globally. Utility model invention is considered susceptible of industrial application if it can be made or used in any kind of industry, including agriculture[94]. Although, the law does not define as to what constitutes the inventive step, but normally it is considered that the utility model involves an inventive step if it is based on an inventive quality which exceeds purely handicraft skills. The concept of inventive step is based on the provision existed in the law which was in force prior to the current law. It is very interesting to note that utility model uses the word **inventive step,** whereas patent law uses the word **inventive activity** for consideration of non-obviousness of the invention. The difference between inventive step as a protectability requirement for utility models and inventive activity as a patentability requirement for patent indicates that for the grant of patent protection the level of inventiveness is higher than for the grant of utility model protection[95].The provisions of Article 2 also provide that the utility model rights shall not be granted to the inventions, the publication or exploitation of which would be contrary to public policy or morality, provided that the exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation and also to the inventions relating to plant or animal varieties and the processes. However, prior to the amendments in 1995, the processes

[92] The German Utility Model is available on WIPO website which was last visited on August,28,2007 at http://www.wipo.int/clea/docs_new/pdf/en/de/de015en.pdf
[93] Article 3(1) of German Utility Model Law.
[94] Article 3(2)
[95] The Protection of Technical innovations and Designs in Germany, VCH Law Books publication,1993.pp-128

were also registered as utility Models. In 1990 the requirement relating to three dimensions configurations were discontinued.

(b) Non-Protectable Subject matter: Article-2 provides that discoveries, scientific theories and mathematical methods, aesthetic creations, schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers, presentations of information are not regarded as the subject matter of a utility model protection. Although the law currently excludes the computer programs as such but provides protection to computer-implemented inventions as utility models, provided that they have technical characters and are no "process." However, the dominant opinion suggests that such inventions as described with functional elements may be protected under the Utility Model Law only if the described functions affect the constructive structure or outer form of the inventions[96].

(c) Term of Protection: According to the provisions of Article-23, the term of utility model protection shall be for a period of three years from the day following the filing of the application for utility model registration. The term of protection may be initially renewed for a further three years on payment of a fee as prescribed by the schedule of fees, and then for a further two years each time to ten years at the most. A utility model shall lapse if the registered proprietor abandons it by a written declaration made to the Patent Office or due to non payment of the renewal fee.

(d) Priority Right: The provisions of Article-5 provide the applicant the right of priority for filing domestic utility model application on the basis of patent application. However such right may be exercised up to the expiration of two months from the end of the month in which processing of the patent application or any opposition procedure is terminated, at the latest, however, by the end of the tenth year from the date of filing of the patent application. Under Article 6, the applicant is entitled to file application within a period of 12 months from the date of application for an earlier patent or utility model application; the applicant shall enjoy a right of priority for the application for a utility model for the same invention. The applicant is also entitled to file an application for utility model within 12 months under Paris Convention from the

[96] Modalities of Future Utility Model System, IIP Bulletin 2004,pp-41

date of filing of application for patent or utility model. The provisions relating to foreign priority are applicable as prescribed under the patent law.

(e)Requirement for Utility Model Registration: The provisions of Article 4 prescribe minimum requirement for filing the application for application for utility model protection which include filing of a request for registration of the utility model in the prescribed manner which must designate clearly and concisely the subject matter of the utility model, one or more claims specifying what is to be protected by the utility model, a description of the subject matter of the utility model the drawings. A separate application is required to be filed for each invention.

(f) Grace period: Provisions of Article 3 provides six months grace period to file utility model application. According to theses provisions, description or use within the six months preceding the date relevant for the priority of the application is not to be taken into consideration if it is based on the conception of the applicant or his predecessor in title.

(g) Examination: The utility models are registered on the meeting the basic formal requirements as prescribed under Article 4.There is no substantive examination of the subject matter as to novelty, inventive step or industrial applicability is carried out.[97] The substantive examination as to novelty, inventive step and industrial applicability is carried out only in case of litigation or cancellation proceedings. On the registration, a summary list of registrations is published in the Patent Gazette for public inspection and fact of registration are entered in the register maintained in the patent office.

(g) Rights of the owner: On the registration of a utility model, proprietor alone is authorized to use the registered the utility model. Any person without having his consent is prohibited from making, offering, putting on the market or using a product of the utility model, or importing or stocking the product for these purposes. Further, persons without the consent of the proprietor are also prohibited from supplying or offering to supply within the territory to Germany to exploit the subject matter of the utility model. However, such a provision is not applicable to the acts done privately for non-commercial purposes, acts done for experimental purposes relating to the utility model,

[97] Article 8(1)

the use on board vessels of another country, where such vessels temporarily or accidentally enter the waters to Germany and the use in the construction or operation of aircraft or land vehicles of another country where these temporarily or accidentally enter the territory of Germany[98].

(h) Search Provisions: The provisions of Article 7 provides that a request for search for the publication in order to assess the registrability of the subject matter of the utility model application or the utility model, may be filed by the applicant or the registered proprietor or by any other party. This search report is only in respect of publications and enables third party or the applicant or the right holder to ascertain as to whether the utility model application meets the requirement under the law. However the search results are not binding and do not affect the registration of utility model.

(i) Cancellation: According to the provisions of Article 15,any person can assert a claim against the person registered as proprietor of utility model for cancellation if the subject matter of the utility model is not registerable (such as due to lack of novelty, inventive step or industrial applicability), or the subject matter of the utility model is already protected on the basis of an earlier patent or utility model application, or if the subject matter of the utility model extends beyond the content of the application as originally filed. Where the grounds for cancellation relate to a part only of the utility model, only that part will be cancelled. The request for cancellation of a utility model is required to be filed with the Patent Office in writing stating the grounds and with prescribed fee. If the fee is not paid, the request is deemed not to have been filed. Appeals from decisions of the Utility Model Division rejecting the registration shall lie to the Patent Court.

(j) Infringement: Article 24 provides that any person, who uses a utility model contrary to the provisions of the Utility Model law, may be sued by the injured party for such unauthorized such use. Any person who undertakes such action intentionally or negligently will be liable for compensation to the injured party for the damage suffered there from. However, if the infringer is charged with only slight negligence, the court may fix, in lieu of compensation, an indemnity within the limits of the damage to the injured party and the profit

[98] Article 11

which has accrued to the infringer. In case of infringement, the injured party may require destruction of the product which is the subject matter of the utility model and is in the possession of the infringer or is his property unless the infringing nature of the product can be removed in some other way and its destruction would be disproportionate in the individual case for the infringer or the owner.[99]

(k) Amendments: According to provisions of Article 4(5),,the applicant can amend or alter the contents of the application until the time of the decision to register the utility model. However, such amendments or alterations in the contents of the application are permissible insofar as they do not broaden the scope of the subject matter of the application. No rights may be derived from alterations which broaden the scope of the subject matter of the application.

(l) Dual application and protection: The provisions of Article 6(1) allows filing of subsequent application for the same invention within the period of twelve months date of application for an earlier patent or utility model application. This allows the utility model right owners to enforce their rights under either protection system, when patent is granted and the utility model registration is not automatically extinguished or deemed to have been withdrawn.

(m) Penal Provisions: The provisions of Article 25 provide certain penal provision to the offender who violates or acts contrary to the provisions contained in the utility model law.

4.2.3 Review of statistical data: The details of industrial property applications such as patent, utility models and industrial designs filed with the German patent office for last ten years from 1996 to 2005 are given in the table below**.**

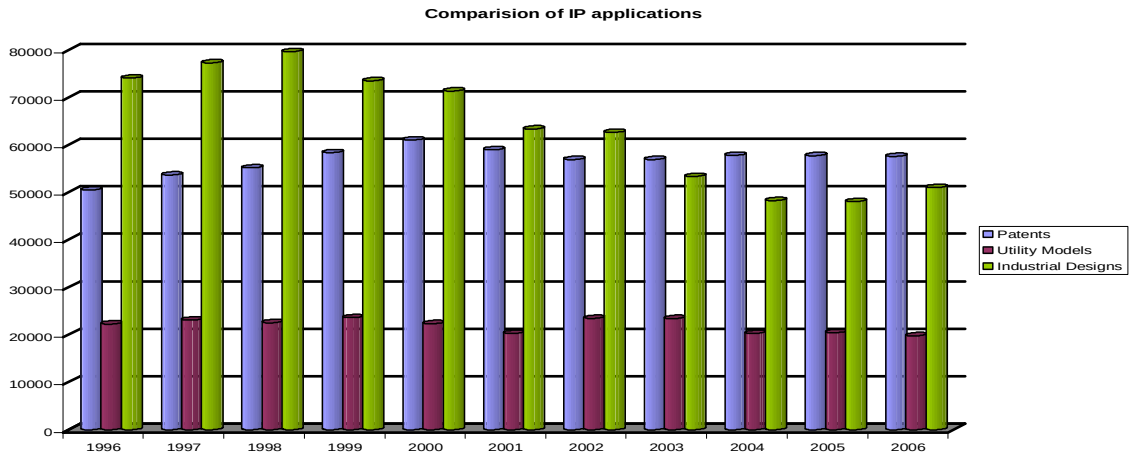
[99] Article 24a.

Table- Applications from 1996-2005[100]

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Patents										
(a)Domestic	42322	44438	46523	49662	51414	49502	47352	47328	48329	47537
(b)Foreign	8192	9214	8642	8701	9620	9465	9557	9610	9455	10214
Total	**50514**	**53652**	**55165**	**58363**	**61034**	**58967**	**56909**	**56938**	**57784**	**57751**
Utility Models										
(a)Domestic	19697	20152	19887	19559	18899	17126	17363	16945	17053	17021
(b)Foreign	2579	2910	2654	4025	3411	3159	6065	6463	3233	3397
Total	**22276**	**23062**	**22541**	**23584**	**22310**	**20285**	**23428**	**23408**	**20286**	**20418**
Industrial Designs										
(a)Domestic	68150	69129	71385	63530	58244	52834	50567	44372	39565	36989
(b)Foreign	5942	8167	8284	9976	13131	9510	12110	8959	8728	11094
Total	**74092**	**77296**	**79669**	**73506**	**71375**	**63344**	**62677**	**53331**	**48293**	**48083**

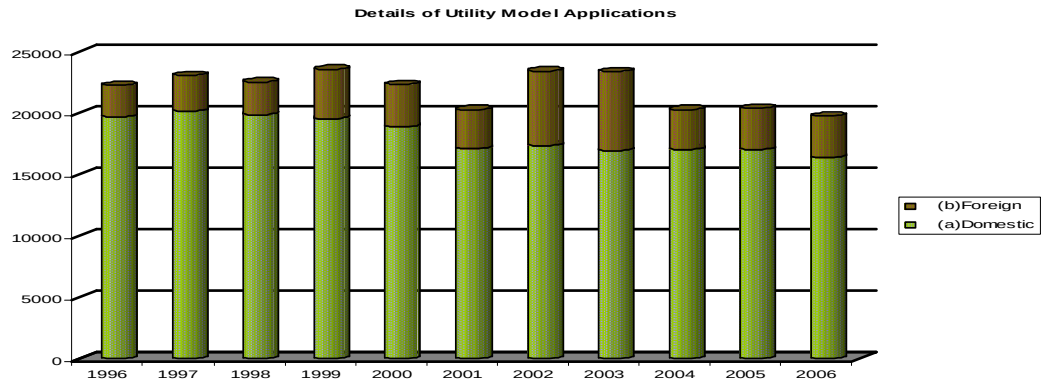
(Source: Annual report of German Patent and Trade Marks office 20006)

The above table indicates that numbers of applications filed for patents are dominating the number of applications filed for utility model and industrial designs. Since 2001, there has been a slight decrease in the patent and industrial design applications. Similarly, although there has also been a slight decrease in the utility model applications since 2000 but maintaining the steady progress. Although this fall is not so high in case of patent and utility model applications but is very substantive in case of industrial design applications, which is approximately 40%in 2005 as compared to number of applications filed in 1998.Therefore the decrease in the utility model applications, not being of great deal, does not in any case indicate that the use of utility model system is declining. The following graphical figure also indicates the trend of IP applications in Germany.

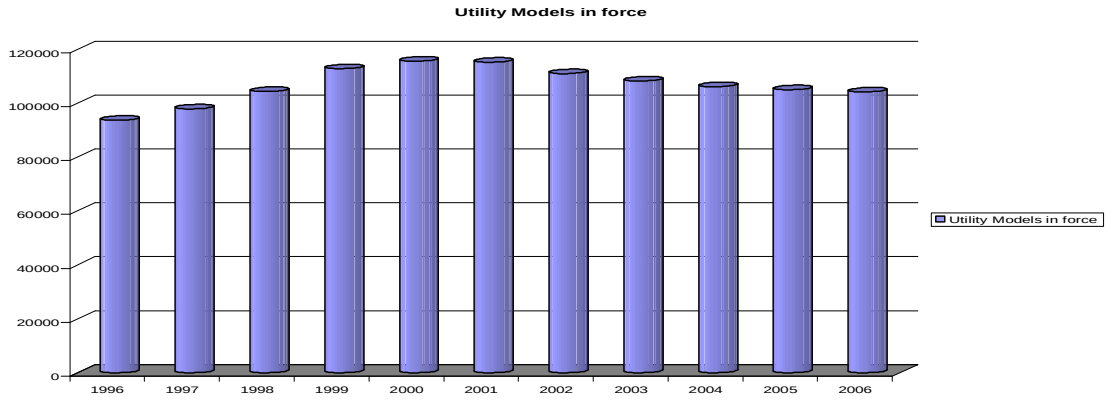


[100] The details of applications indicated in the table are based on the statistics given on the German Patent and Trademark Office website at http://www.dpma.de/index.htm.

(a)Trend in the Utility Model applications filing:

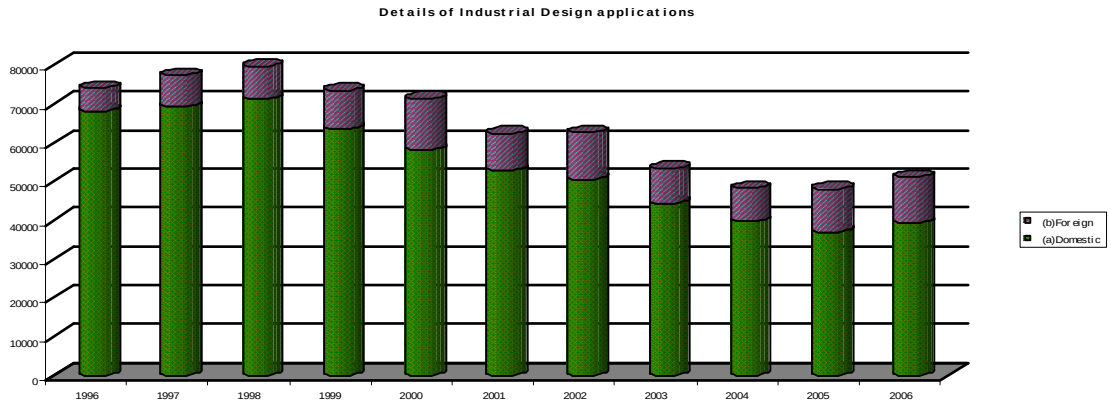


The above graphical figure indicates the trend in the number of utility model applications filed by domestic applicants and foreign applicants. The trend also indicates that domestic applicants are utilizing the system more vigorously than the foreigners. It can be inferred from the trend that this system is more suitable to domestic industries or innovators to protect their small innovations as utility model in order to improve the technology and facilitate in early commercialization of such innovations, which would ultimately foster the technological development in the country. The chart given below indicates the number of utility model in force. The trend indicates that number of utility models in force, although slightly decreased in 2006 as compared to 2000 and 2001but increased as compared to 2004 which indicates the increasing trend. Therefore the decrease was short term trend.



(b)Trend in the Industrial Design applications: The trend in the design applications as indicated in the graphical figure below indicates the decrease in the number of applications in 2004 as compared to number of applications

filed in 1998.However the number of applications started increasing from 2005 onwards. The number of applications filed by domestic applicants is more than the foreigners and it continues to increase further.



The above trend clearly indicates that the German Utility Model System continues to be popular with industry as it is utilizing the system well. The fact that Germany has been ranked by the European Commission as sixth most innovative economy in the world, suggests that the advantages of utility models are not only confined to that of facilitating an economy's advancement from developing to developed country status[101].

4.2.4 Role of utility model in the development: The growth in intellectual property output in Germany started increasing mainly due to German companies`s strategic focus on legal protection for intellectual property on globalized market. One of the most important features of the German utility law is that it protects the computer-implemented inventions having technical characters which promote the information technology area. The German utility model has always been the source of inspiration for many countries that have virtually followed the German utility model law provisions in enacting their own laws to protect the small innovations as utility models. The utility models allow the holders to have early exploitation of the invention due to very short time taken for the registration of rights as compared to patents. This helps them to early introduction of products in the market resulting out of utility model innovations. Therefore this law is still very much utilized by German industries

[101] Utility Models and Innovation in Developing Countries, issue Paper No.13,by Uma Suthersanen,2006,pp-16

in order to protect their innovations quickly for early exploitation of the products. Although there are no direct evidence to conclude that utility models are responsible for the development of the country but certainly industrial property as a whole including utility models have played a very important role in the economic and technological development.

4.3 AUSTRALIA

4.3.1 Historical development of Petty Patent and Innovation patent:-

Australia, being a commonwealth country inherited its patent system from United Kingdom but gradually developed its own independent system. Before introduction of second tier patent system, the Patents Act 1952 was in force and currently the Patents Act 1990 as amended in 1998 in order to meet TRIPS obligation. As far as second tier patent system is concerned, Australia has an experience of implementing two systems. One was petty patent which was introduced in 1979 and other is innovation patent which is currently in force and introduced in 2001.An innovation patent or petty patent ,however can not stop third party from the using the innovations protected under innovation patent for commercial gains without authorization, unless such innovation patents are duly examined under the law. Once they are examined and certified, one can legally enforce them.

In fact, the introduction of petty patent system in Australian was mainly due to perceived deficiencies in patents and designs law. In 1973, while reviewing the design law, a committee known as Designs Laws Review Committee or 'Franki Committee' observed that there was a need for 'a system that ha[d] most of the features of the existing patent system but which offer[ed], for a relatively short term, a form of protection that is inexpensive and easy to obtain and that is quickly obtainable' to encourage inventions of short commercial life[102.] It was also observed that the design registration was inadequate, as design registration merely protected the aesthetics and not the functionality of a design[103.] Similarly, the standard patent protection also did

[102] Commonwealth, Designs Law Review Committee ('Franki Committee'), *Report Relating to Utility Models (Second Term of Reference)*, Parl Paper No 121 (1973) 12 quoted in a report of Intellectual Property Research Institute of Australia (IPRIA) No 02/04,November,2004,revised in April 2005,pp-1

[103] Intellectual Property Research Institute of Australia (IPRIA) Report No 02/04,November,2004,revised in April 2005,pp-9

not adequately cater for inventions of a shorter commercial life. While suggesting the changes in the Design law, the Franki Committee also recommended the introduction of petty patent.

Therefore, on the basis of the recommendation of the Franki Committee a bill was drafted which was referred to Industrial Property Advisory Council(IPAC) for consideration., Accordingly the Patents Act 1952 was amended in 1979 to introduce the petty patents and amended law became operative since July,1,1997 allowing petty patents for small inventions. Petty patents were allowed for an initial term of one year from the date of sealing, with a maximum term of six years from the date on which the patent application was filed. During the initial year of a petty patent, evidence pertaining to grounds of invalidity could be brought by third parties to the Commissioner. Provisional applications could not be made for petty patents although; a provisional application could be filed for a standard patent. However, the filing of provisional specification was allowed when the Patents Act was amended in 1990. Therefore the earlier priority date, based on the provisional application, could be claimed for a petty patent. The subject matter and patentability requirements for which petty patents were permitted were identical to that of standard patents. Under the petty patent system only one claim for the petty patent was allowed in the specification. Prior to the grant of a petty patent, a petty patent application could be converted to a standard patent application. Like standard patents, petty patents could be applied for via the Patent Co-operation Treaty route.

The objective of the petty patent system was to create a form of patent protection that was less expensive, easier and more quickly obtained than standard patent protection, and that would accordingly be used for inventions with a relatively short commercial life. The view was that the time and cost associated with a standard patent meant that in practice there was 'not a sufficiently quick and inexpensive and simple means of providing protection for the lower range of inventions, especially small articles having short commercial life-spans[104].The petty patent system was primarily intended for

[104]. Commonwealth, Designs Law Review Committee ('Franki Committee'), *Report Relating to Utility Models (Second Term of Reference)*, Parl Paper No 121 (1973) 12 quoted in a report of Intellectual Property Research Institute of Australia (IPRIA) No 02/04,November,2004,revised in April 2005,pp-8

Australian industry particularly Small and Medium Sized Enterprises (SMEs) and inventors

Since, the standard of subject matter for petty patent was equal to that of standard patent and only one claim was allowable. The cost difference for obtaining the petty patent and standard patent was also so big and therefore the law did not receive much support. Accordingly, the Patents Act 1952 was repealed and as a result, the Patents Act 1990 was introduced incorporating the recommendations made in the report of IPAC's Patents, Innovation and Competition in Australia. The Act, which became operative from May, 1, 1991, provided different standards for assessment of novelty. For standard patent, a publication was world wide criteria whereas for petty patent it was domestic. The *Patents Act 1990* also increased the number of permissible claims of a petty patent to a maximum of 3 claims and filing of provisional specification for petty patent.

(a) Review of the Petty Patent System in1995:

In 1995, the Advisory Council of Intellectual Property (ACIP)[105] had a look at the issue as to whether functional innovations received adequate protection through the existing standard and petty patent systems, It was observed by ACIP that the 'petty patent system was not able to provide adequate protection for incremental innovations. ACIP in its report mentioned[106] that

[t]he 'gap' relates to functional innovations that are not sufficiently inventive under the present standard or petty patent system to warrant protection, and are not protectable under the designs system which protects the appearance of articles, but not 'the way they work'. Provision of protection for these incremental innovations will encourage Australian individuals and businesses to invest in the development and marketing of their 'good ideas' in the domestic market

Accordingly, ACIP recommended that the existing second-tier patent system should be changed to provide 'fast, limited monopoly protection for lower level or incremental inventions'. This new system would require a lesser level of inventiveness than petty patents. Other recommendations pertaining to the new innovation patent were:

- Increased term of protection of eight years
- Maximum of five claims
- Substantive examination only upon request by applicant or third party

[105] The Industrial Property Advisory Committee is the predecessor of the Advisory Council on Intellectual Property

[106] The contents are cited in the IPRIA Report of 2004

- No opposition proceedings prior to grant
- Same prior art base as standard patents
- Lesser degree of inventiveness required
- Priority obtainable from provisional applications
- Retention of divisional practice
- Possibility of conversion, prior to grant, of an innovation patent to a standard patent
- Possibility of concurrent standard and innovation patent protection for the one invention

(b) The introduction of innovation patent:

The Government accepted some of the recommendations of ACIP and therefore introduced the Innovation Patent System 2001 by amending the Patents Act 1990 by the Patents Amendment (Innovation Patents) Act,2000 with the objectives to fill up the gaps that existed with regard to minor and incremental innovations, to offer a quick, less expensive and simple form of protection to encourage individuals and Small and Medium-sized Enterprises to realize their good ideas and also allow individuals and SMEs protection for a long period of time to encourage investment in innovations. However, the majority of ACIP's recommendations were accepted and introduced in the new law. The new law provided a maximum eight year term, cover no more than five claims, are not subject to opposition proceedings prior to grant, and are only subject to substantive examination at the direction of the Commissioner, or after grant at the request of the patentee or a third party. The threshold level of inventiveness is lower. Innovation patents cannot be filed through the PCT route. ACIP's proposal for dual protection in the form of both a standard and innovation patent was rejected as there was no reason for the same invention to be granted rights under both systems.

4.3.2 Existing law and regulations[107]: The important features of the law for innovation patents are as under-

(a) Patentable subject matter for innovation patent: In order to become eligible for the grant of innovation patent, the provisions of section-18 prescribes following conditions or requirements to be satisfied.

(i), that the invention is a manner of manufacture within the meaning of section 6 of the Statute of Monopolies; (ii) that it is novel when compared with the prior art base as it existed before the priority date,(iii) that it involves an

[107] The existing Australian Patent law is available at IP Australia website, which was last visited on August ,28.2007, http://www.ipaustralia.gov.au/resources/legislation_index.shtml

innovative step; (iv) that it is useful; and (v) it was not secretly used in the patent area before the priority date by or on behalf of, or with the authority of, the patentee or nominated person or the patentee's or nominated person's predecessor in title to the invention.

However, in order to decide as to whether a particular act is a secret use or not, it is stipulated in the provisions of section 9 of the Act that the certain acts as mentioned therein are not considered being secret use. They are, namely,

- any use of the, for the purpose of reasonable trial or experiment only;
- any use of the invention ,being use occurring solely in the course of a confidential disclosure of the invention
- any other use of the invention for any purpose other than the purpose of trade or commerce;
- any use of the invention by or on behalf of the Commonwealth, a State, or a Territory where the patentee or nominated person, or his or her predecessor in title to the invention, has disclosed the invention, so far as claimed, to the Commonwealth, State or Territory.

The novelty criteria for the innovation patent are the same as the standard patent criteria but subject to certain exceptions as laid down in section 24.The criteria are based on the absolute novelty principles. However the inventive threshold is lower in case of innovation patent compared to standard patent. According to the provisions of section 7(4), an invention is to be taken to involve an innovative step when compared with the prior art base unless the invention would, to a person skilled in the relevant art, in the light of the common general knowledge as it existed in the patent area before the priority date of the relevant claim, only vary from the kinds of information in a publicly available single or two or more related documents, in ways that make no substantial contribution to the working of the invention. The Act also define the term *prior art base* as the information in a document or otherwise publicly available anywhere in the world[108].

(b) Non Patentable inventions: The inventions relating to, plants and animals, and the biological processes for the generation of, plants and animals are not considered patentable inventions for innovation patent

[108] This terminology has been defined and given at the end of the Act.

purpose.[109] However, such inventions are patentable subject matter for standard patent. If the invention is a microbiological process or a product of such a process is a subject matter for innovation patent. However, Human beings, and the biological processes for their generation, are not patentable inventions for the purpose of standard patent as well as for the innovation patent[110].

(c) Priority rights: The applicant for innovation patent can not enjoy the right of priority under PCT for filing innovation patent but they enjoy the domestic priority rights. The rights of priority for divisional applications for innovation patents are also available under section 79(c).

(d) Filing requirements: The requirements of filing of the application for the innovation patent are the same as for the standard patent except that the complete specification must have at least one and no more than 5 claims defining the invention. The application for innovation patent can also be filed as divisional application either from the earlier application for innovation patent or from the application filed for standard patent or from the PCT application for standard patent. However no application can be filed as patent of addition[111].

(e) Acceptance of innovation patent application: On filing of the complete specification, the application for innovation patent will be subjected to formality check under section 52 of the Act. If application satisfies the requirements and passes the formalities check, it is accepted for the registration. On acceptance of the application and if there is prohibition order under section 152(for associated technologies) and section173(defense purpose inventions)in force, the innovation patent will be granted by sealing an innovation patent in the approved form under section 62 and published under official journal for public inspection. Normally it takes about one month for the notification of grant, if the application passes the formality check examination[112].Therefore the examination of innovation patent application is limited only to the formal examination.

[109] Section-18(3) of the Patents Act,1990
[110] Section-18(2)
[111] Section-80
[112] http://www.ipaustralia.gov.au/patents/what_innovation.shtml

(f) Publication of innovation patent: Innovation Patents are published as soon as formalities examination has been completed, and no later than three months after filing. This early publication is in place to keep the public abreast of advances in the relevant technology and gives other innovators an opportunity to request early examination

(g) Term of protection: The term of an innovation patent is 8 years from the date of the patent[113].The date of patent is the date of filing the complete specification and where the regulations provide for the determination of a different date as the date of a patent, the date determined under the regulations will be the date of patent[114]. There is no provision for further extension of the term of protection for innovation patent. However, the term of standard is extendable.

(h)Examination: According to the provisions of section 101A, the complete specification for innovation patent can be examined only after its grant either if the commissioner decides to do *suo-motto* or if the request for substantive examination is made in writing by the patentee or by the third party. The complete specification can also be re-examined under section101G, either if the commissioner decides to do *suo-motto* or if the request for substantive examination is made in writing by the patentee or by the third party.

(i)Grace period: The grace period of 12 months is prescribed under the provisions of the section 24 and regulation 2.3 of the Australian law which enables the applicant to file application even when the invention has been published prior to the filing of the application. However, it may be noted that this period is same as applicable to standard patent applications.

(j) Revocation of and opposition to innovation patent: The Act also prescribes the provisions for the revocation of innovation patent on certain grounds[115].

(k) Dual Protection and conversion of the application: There is no provision in the Act to allow dual protection to the invention as standard patent or innovation patent. There is also no provision for the conversion of the application for the standard patent to innovation patent or vice versa. However

[113] Section- 68
[114] Section -65
[115] The grounds for revocation of innovation patents are provided under section 101B,101F and 101J .The grounds for opposition to the innovation patents are provided in section 101M.

the, applicants are able to file a divisional application for an innovation patent from a standard patent application. This is generally being done to obtain quick protection for a particular commercial embodiment of the invention.

(l)Other provisions: The provisions such as infringement, amendment of specification and other documents, burden of proof, withdrawal of the applications are same as for the standard patent

The table given below provides a Comparison between innovation patent and standard patent

Activity	Innovation Patent	Standard Patent
Subject matter	Be new, useful and involve an *innovative step*	Be new, useful and involve an *inventive step*
Number of claims allowed in the specification	A specification including title, description, *up to 5 claims*, drawings (if applicable) and an abstract, and forms	A specification including title, description, *no limit to the number of claims*, drawings and an abstract, and forms
Examination	After grant but only if requested by the applicant, a third party or the Commissioner of Patents, and a fee is paid.	It is compulsory for an applicant to request examination, and pay a fee
Acceptance	After passing formalities check	After passing examination
Grant/Sealing	Granted after acceptance	After acceptance and opposition period
Certification	*After passing examination*	*N/A*
Enforcement	After Certification	After Sealing
Filing of Opposition	At any time after the grant and again at certification	18 months from priority date and again after acceptance
Time from filing to grant	Approx. 1 month (Note - this does not include examination)	Up to 4 years
Protection period	8 years max, if annual fees paid	20 years max, if annual fees paid (up to 25 for pharmaceuticals)

(Source**:** http://www.ipaustralia.gov.au/patents/what_innovation.shtml)

4.3.3 Review of statistical data: The details of the applications filed with the Australian Patent Office from 1993-94 to 2005-06 for standard patents, petty patents and innovation patents are given below in the Table—1 and Table—2. The number of applications filed for standard patent indicates a continuous growth in the filing rate of the applications not only in the applications received by normal rout without using PCT system but also in the applications received as national applications using PCT rout. The similar increasing growth of trend

is also seen in the applications filed for the petty patents and innovation patents.

Table-1 Details of applications filed from 1993-94 to 1999-2000

	1993-94	1994-95	1995-96	1996-97	1997–98	1998–99	1999–00
Non-PCT standard applications	7 530	6 878	6 645	6 358	6 476	6 507	6 638
PCT standard applications	5 590	6 735	7 724	9 183	11 286	12 399	14 556
Provisional applications	6 843	7 331	6 801	6 892	6 782	6 914	7 171
Petty patent Applications Total	413	389	339	394	480	526	640
Petty patent by Australian Res.	**320**	**317**	**269**	**280**	**352**	**423**	**513**
Innovation patents filed	0	0	0	0	0	0	0

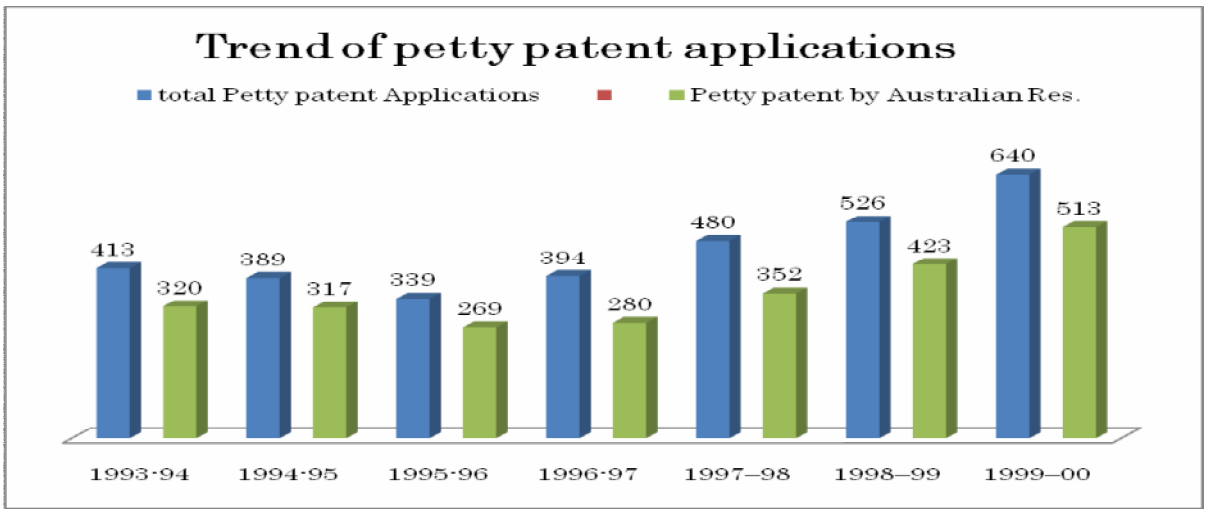
(Source: website at http://www.ipaustralia.gov.au/about/statistics.shtml)

Table-2 Details of applications filed from 2000-01 to 2005-06

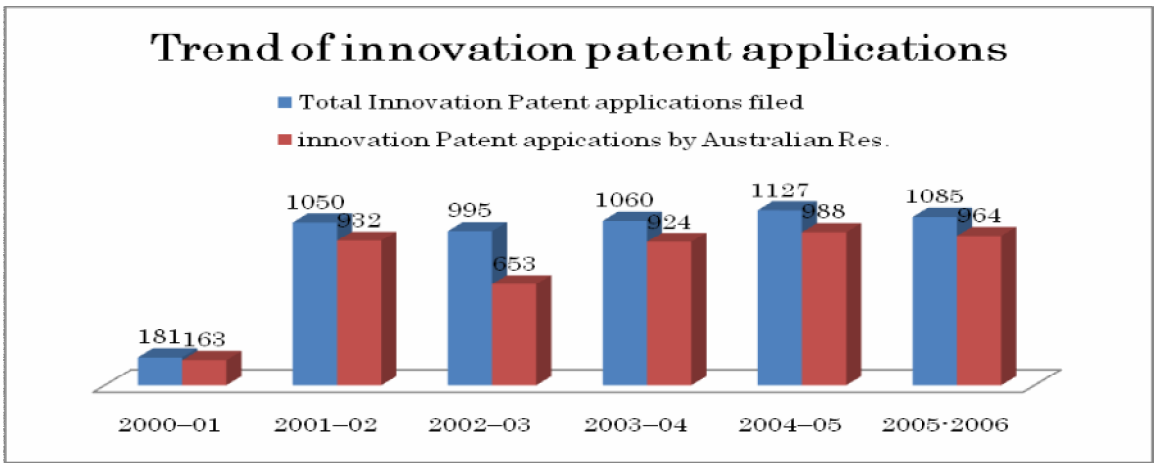
	2000–01	2001–02	2002–03	2003–04	2004–05	2005-06
Non-PCT standard applications	6 418	6 029	5 740	5 843	5985	5845
PCT standard applications	16 133	16 501	16 262	16 140	17 508	18815
Provisional applications	7 504	7 206	7 075	7 428	7 295	7433
Petty Patent applications	562(455)*	0	0	0	0	0
Total Innovation Patents filed	**181**	1 050	995	1 060	1 127	1085
Innovation Patents by Australian Res.	163	**932**	**653**	**924**	**988**	**964**

(Source: website at http://www.ipaustralia.gov.au/about/statistics.shtml)

(a)Trend of petty patent applications: The following graphical figure represents the trend of filing of petty patents from 1993-94 to 1999—2000.The trend clearly demonstrate that petty patent applications filed by domestic applicants are much more than the foreign applicants. This increasing trend of domestic applicants establishes that the petty patent system was good for encouraging the innovative activities of domestic innovators which was fully utilized by them but number of applications filed for petty patent was very small about 500 applications.

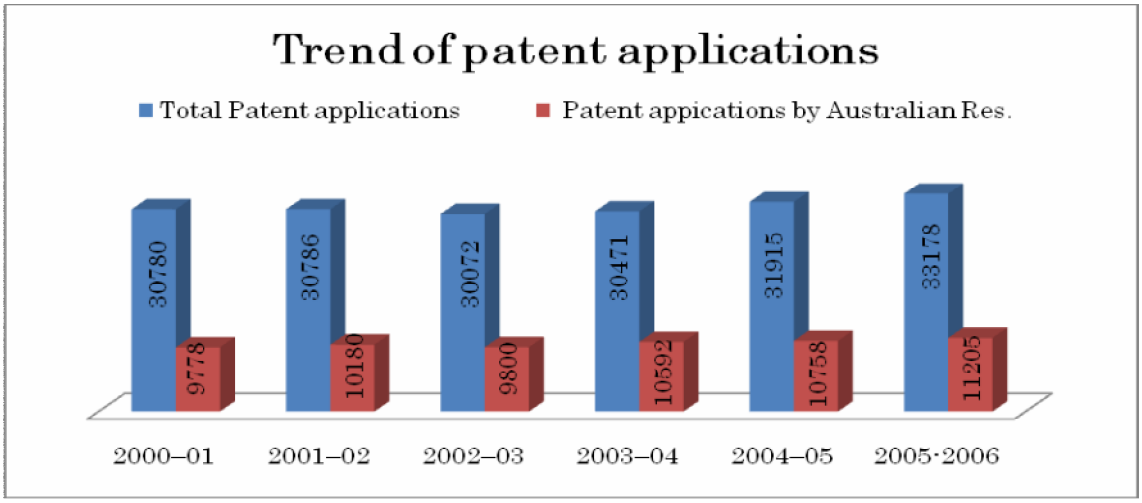


(b)Trend of innovation patent applications: The graphical figure given below is indicating the trend of innovation patent applications filed from 2000-01 to 2005-06.The trend again indicates that like petty patent applications, innovation patent applications are also predominantly filed by the domestic applicants as compared to the foreign applicants. The local applicants are responsible for about 85 to 90% of total applications. However, it is worth noting that number of innovation patent applications filed by Australian nationals have been doubled compared to those filed as petty patent applications and therefore has been utilized to the greater extent. This again points out that the innovation patent system has been more successful for encouraging the innovative activities of domestic innovators than the petty patent system.



(c) Trend of patent applications filed by Australian domestic applicants: The following graphical figure indicates the trend of total applications filed by the Australian domestic applicants.it indicates that

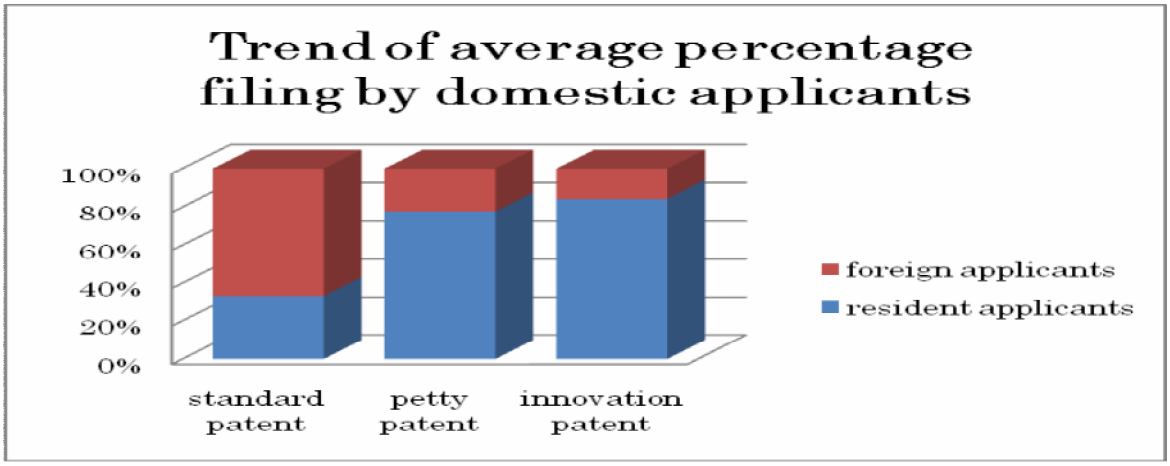
about 30% out of total applications are filed by them.This trend ,however does not sound well for Australia,being a developed country as the number of patent applications filed in other developed countries such as Japan,United States ,Germany ,etc,by their nationals applicants are about 80 to 90% of the total applications



(Source: website at http://www.ipaustralia.gov.au/about/statistics.shtml)

(d) Trend in average filing of applications:-As indicated in the graphical figure below, from 2000-01 to 2005-06, currently, the average proportion of applications by Australian domestic applicant's standard patent is about 30% of total standard patent applications, whereas for foreign applications ,it is 70% of the total applications. However in 2001, Australian applications made up only 10% of total standard patent applications which was 14% in 1994[116.] In sharp contrast to applications for standard patents, the average proportion of Australian domestic petty patent applications to foreign petty patent applications during the period from 1993-04 to 1999-2000, was 75% and 25% respectively maintaining more or less the same proportion as it was in 2001. The average proportion of Australian domestic applicants applications for innovation patents is more than that of petty patents which is about more than 80% of total applications with the remainder being from foreign countries

[116] Australia`s Second Tier Patent System: A Preliminary Review, by Intellectual Property Research Institute of Australia (IPRIA) Report No 2/04,November,2004, pp-32



4.3.4 Role of Petty Patent and Innovation patent in the development: In fact the introduction of petty patents in Australia was made with an objective to cater the need of protecting the innovative activities of individual inventors and SMEs whose inventions were of short commercial value, and for whom standard patent protection was too costly or time consuming. The innovation patent on the other hand was introduced with an objective specifically to bridge the gap in patent protection for minor and incremental innovations and inventions relating some functional improvement which could not be protected under design law. Like petty patents, innovation patents were also intended to be less expensive and quicker to receive than standard patents. In addition, the inventiveness threshold for innovation patents was reduced to render lesser innovations patentable[117]. According to the preliminary review of second tier patent protection system conducted by Intellectual Property Research Institute of Australia（IPRIA）,the second-tier patent systems in Australia have been and still continue to be used in relation to technology types other than those in relation to which standard patents are sought. There is no commonality between the 'top 5' technology groups for which standard patent applications are made and the 'top 5' technology groups for which petty and innovation patent applications are made[118].

According to the report, the top five technology groups for standard patents are all knowledge-intensive areas, These technology groups are namely,(a)Organic fine chemicals, (b) Pharmaceuticals and cosmetics,

[117] Intellectual Property Research Institute of Australia (IPRIA) Review Report No 2/04,November,2004, pp-48

[118] ibid,pp-52

(c)Medical engineering,(d)Telecommunications and (e)Analysis, measurement, control. In case of petty patents the five most represented technology groups were namely (a) Consumer goods & equipment, (b) Civil engineering, building, mining (c) Handling, printing (d) Agriculture & food machinery and (e) Transport. It may be noted that none of the technology areas for which standard patents are predominantly sought appeared within the top five technology groups for petty patents. Similarly in case of innovation patents, the technological groups are same as petty patents except information technology. They are (a) Consumer goods & equipment (b) Civil engineering, building, mining (c) Transport (d) Handling, printing and (e) Information technology. It is interesting to note the presence of information technology among the 'top 5' technology groups for innovation patents. In fact this is an area in which the quick grant of a patent is particularly relevant, in order to speedily prevent competitors from copying since the developments in information technology occur at a rapid pace and the quick protection offered by innovation patents becomes very important. it is observed from the above review of statistics that the petty patent and innovation patent protection system have been utilized predominantly by the Australian domestic innovators and companies as compared with foreign applicant that too for different technological groups.

Therefore the systems have played very important role in protecting the technologies which have short commercial life and hence played an important role in the technological development as well. However as the number of applications filed by the Australian applicants are far less than those filed by the Japanese and German domestic applicants in their own countries. This is perhaps mainly due to low expenditure on research and development activities. According to the report released by Australian Bureau of Statistics, Australia is spending very low on R&D by the world standard, although their Gross Expenditure on R&D (GERD) in 2002-03 was US$ 12,250 million which is 17.6% higher than 2000-01.Similarly the number of persons devoted to R&D were 104,252 persons in 2002-03,which were 9% higher than in 2000－01.However in order to make the system more useful and beneficial, IP Australia has further reviewed the innovation patent protection system and

submitted its review report in July 2006[119]. One of the recommendations in the report is that IP Australia should routinely assess the proportion of innovation patent applications that appear to be used for tactical reasons regarding higher-level inventions rather than as attempts to secure protection for lower-level inventions.

According to this report, the House of Representatives Standing Committee on Science and Innovation tabled the report of its inquiry into pathways to technological innovation on 19 June 2006. The Committee briefly considered the innovation patent, and recommended that IP Australia should implement strategies to promote the uptake of the innovation patent, and report to the Government on this and on the effectiveness of the innovation patent in reducing costs for small to medium enterprises[120].with the changes in the innovation patent system like conversion of the applications from standard patent to innovation patent or vice a versa, cost effectiveness, etc, the system will be more effective and used more vigorously.

4.4 The European Commission's Proposals: After having discussed the Green Paper presented in 1995,the European commission submitted the proposal for European Parliament and Council Directive approximating the legal arrangements for the protection of inventions by Utility Models on December,12, 1997[121].The commission in fact submitted its proposals by recognizing the facts that it is important to create the conditions for Community industry to be competitive and to promoting a better exploitation of the industrial potential of innovation, research and technological development policies. The Commission felt that there is a need for placing at the disposal of firms, and in particular small and medium-sized firms and researches, an instrument which is cheap, rapid and easy to evaluate and apply. Accordingly the Commission considered that the utility model protection is better suited than patent protection to technical inventions involving a specific level of inventiveness. The proposals of 1997 were considered by the European Parliament and approved them with certain amendments. In the light of

[119] This report is available at http://www.ipaustralia.gov.au/pdfs/news/ReviewInnovationPatent.pdf

[120].Review of the innovation Patent, Government of Australia, IPAUSTRALIA, Final report 2006 pp-6, available at http://www.ipaustralia.gov.au/pdfs/news/ReviewInnovationPatent.pdf

[121]Proposal for a EUROPEAN PARLIAMENT AND COUNCIL DIRECTIVE approximating the legal arrangements for the protection of inventions by utility model are available at European Commission website http://ec.europa.eu/internal_market/indprop/docs/model/util_en.pdf

amendments proposed by the European Parliamenthe, the 1997 proposals were further amended by the European Commission in 1999[122].The following are the salient features of the proposed European utility model law.

(a)Protectable Subject Matter: Article 3 provided that utility models can be protected for inventions which are susceptible to industrial application, which are new, and which involve an inventive step. However, it further provides that inventions relating to (a) discoveries, scientific theories and mathematical methods;(b) aesthetic creations;(c) schemes, rules and methods for performing mental acts, playing games or doing business; and(d) presentations of information shall not be regarded as inventions[123].As far as novelty of the invention is concerned, the provisions are similar as applicable to patents under EPC, except that content of utility model and patent applications filed before in the member states or designate that member state, and which were published on or after the filing date of such application for utility model shall also be considered as a part of state of art[124]. Similarly the term inventive step has also been defined to exhibit an advantage over the state of art provided such advantage is not very obvious to a person skilled in the art. However, such advantage must be a practical or technical advantage for the use or manufacture of the product or process in question or another benefit to the user.[125]Provisions relating to industrial applications are also similar to patent and therefore ssurgical or therapeutic treatment procedures applicable to the human body or to the bodies of animals and diagnostic procedures which are carried out on the human body or the bodies of animals shall not be considered to be inventions susceptible of industrial application[126].

(b) Non protectable subject matter: The provisions of Article 4, specifically excluded from protection inventions relating to biological material or to chemical or pharmaceutical substances or process and inventions the exploitation of which would be contrary to public policy or morality. However

[122] The Amended proposal for a EUROPEAN PARLIAMENT AND COUNCIL DIRECTIVE amending the original proposal of 1997 are available a document COM(1999) 309 final /2 at European Commission website http://ec.europa.eu/internal_market/indprop/docs/model/utility_en.pdf
[123] Article 3(2) of the proposals
[124] Article 5
[125] Article 6
[126] Article 7

the 1997 proposals also excluded from its protection the inventions involving computer programs.

(c) Formal Requirements Examination System: The EU proposed to adopt the formal requirements examination system under Article 15. During a formal requirements examination, only the formal requirements for registration are to be examined. The substantive requirements of novelty, inventive step, and industrial applicability are not required to be considered at this stage for examination. There is no restriction on the number of claims to be filed.

(d) Duration of the term of Protection: The duration of term of protection as proposed for utility models under Article 19 is six years, renewable twice for two years each time, thereby providing a maximum of 10 years of protection for utility models. However such extension of term is subject to the condition that the right holder shall file a request for a search report six months prior to the expiry of the term.

(e) Priority Right: According to the provisions of Article 17, a utility model applicant may enjoy a right of priority for a utility model application or patent application filed in or for an EU Member State within the previous 12 months. A similar internal priority right is provided under Article 18 for a prior patent application within the previous 12 months to a utility model application for the same invention, unless priority has already been claimed for the patent application.

(f) Dual Application, but not Dual Protection: Article 23 allows the dual application provision under both patent and utility model applications to be filed, either simultaneously or successively, for the same invention. This Article, however, further provides that a utility model is deemed to be ineffective once a patent is granted and published for the same invention, and require Member States to take appropriate measures to prevent the proprietor from instituting proceedings under both the patent and utility model protection arrangements in the event an infringement. Therefore, this arrangement is restricting the right of the utility model or patent owner to take legal action under only one protection arrangement in the event of infringement.

(g) Revocation and Amendment: According to the provisions of Article 25, an application for revocation may be filed under on the grounds that he utility model subject matter is non-protectable under the law, that disclosure is

insufficiently clear or complete to enable a person skilled in the art to carry out the invention, that the subject matter of the utility model extends beyond the content of the utility model application as filed, or that protection has been extended. Revocation may be either partial or complete. If the revocation affects only partially, the claims, the description, or the drawing are to be amended or limited accordingly.

(h) Exception to rights: According to the provisions of Article 20, the rights conferred by the utility models are subject to the conditions that such rights shall not affect the acts done privately for non-commercial purpose and acts done for experimental purposes.

(i) Search report: Article 16 provides that any interested party or the applicant may request for search report concerning the relevant state of the art. It further provides that a search report is compulsory in the event of legal proceedings to enforce the utility model rights, unless the utility model has already been the subject of a previous search report. Under the proposals of 1997,only applicant was entitled to make request for search report.

In view of the above developments, it is clear that the European Commission and European Parliament also realised the importance of the utility model system to SMEs development. In furtherance to these developments on 26 July 2001, the Commission published a staff working paper entitled "Consultations on the impact of the Community utility model in order to update the Green Paper on the Protection of Utility Models in the Single Market" (SEC(2001)1307)[127].According to the summary report[128], three-quarters of the contributors stated their opposition to a Community utility model on the various grounds including the risk of restricting competition and adversely affecting the competitiveness of European companies, less legal certainty, unsatisfactory criteria (level of inventiveness, etc.). Moreover, it was also felt that the utility model would respond to a need for local or even national protection, but would not be justified at Community level. However on the other hand, the interested parties in favour of a Community utility model

[127] Commission Staff Working Paper SEC(2001) 1307 is available at the Commission's website http://ec.europa.eu/internal_market/indprop/docs/model/consultation_en.pdf

[128] Summary report of replies to the questionnaire on the impact of the Community utility model law dated 1st March 2002, prepared by European Commission is available at the Commission's website http://ec.europa.eu/internal_market/indprop/docs/model/utilreport_en.pdf

believed that it would be a useful complement to the patent System. Further, it was also believed that the creation of a Community utility model would be particularly important for SMEs, whose minor technological innovations often have only a short lifetime and have not yet benefited from protection. However, unfortunately the Commission decided to **withdraw** these proposals in 2005, on the grounds that it was unlikely to advance further in the legislative process[129]

[129] According to information updated on 4.12.2006 and available at European Commission website http://europa.eu/scadplus/leg/en/lvb/l26048.htm which was visited on August2,2007

CHAPTER-V

UTILITY MODEL AND DEVELOPING COUNTRIES

Protection of small innovations by means of utility models is prevalent in many developing countries as well. This System, apart from Japan, also seems to be very popular in Asian region particularly in China, Korea, Taiwan province of China, Hong Kong（China）, Philippines, Vietnam, Indonesia, Thailand, Magnolia, etc. However countries like Japan, China and Korea have exploited the system very successfully in order to promote the technological development particularly by protecting the small innovations which are having practical utility but are unable to meet the inventiveness criteria for patent Protection. This system has helped the utility model right holders particularly Small and Medium Sized Enterprises （SMEs） in commercializing their innovations at early stage of technology development as the system is quick, inexpensive and effective. Other developing countries, other than Asians, have also enforced such a system such as Brazil and other Latin American developing countries. However the countries like China, Korea and Brazil have long experience in this area due to their successful implementation of the system and they are also fast developing economies of the world. Therefore, this research study has been restricted to utility model related laws of China, South Korea and Brazil. However the statistical data relating to utility models of Taiwan province of China, Philippines, Vietnam, Indonesia, Thailand and Magnolia are also be reviewed.

5.1 China

5.1.1 Historical development of utility model law-The Patent Law in China was adopted on March 12, 1984 but came into force from April 1, 1985 with the objectives to protect patent rights for inventions-creations, to encourage invention-creation, to foster the spreading and application of inventions-creations, and to promote the development and innovation of science and technology, for meeting the needs of the construction of socialist modernization[130].The Patent law governs not only invention patents but also utility models and Industrial Designs for the grant of patent rights. At the time

[130] Article 1 of the Patent law of the People's Republic of China

when the law was first enacted, the utility model rights were granted only for seven years whereas invention patent rights were granted for 15 years.

However, for the first time, the law was amended in 1992 which became effective from April 1, 1993, in order to provide not only more strong rights but also provide them expeditiously. Therefore, the opposition procedure was scrapped and instead revocation procedure after the grant of patent rights was introduced. Moreover, the provisions relating to compulsory licences were also strengthened. In order to encourage the protection of the utility model rights, the term of these rights was further extended to 10 years in place of 7 years.

The patent law was again amended further in 2000 which entered into force from July 1, 2001.Under these amendments, a judicial process was introduced enabling the applicants for utility model and industrial design rights to file an appeal against the rejection decision of the Re-examination Board. Further provisions relating to establishment of search report on the request of the applicant were also introduced in order to enable the right holder to initiate legal proceeding against the infringer. However, the provisions relating to revocation procedure introduced in 1992 were repealed being very complicated.

5.1.2 Existing law and regulations

(a) Protectable Subject Matter: According to the provisions of Article 22 of the patent law, any invention or utility model must possess novelty, inventiveness and practical applicability. However, Article 2 of the Implementing Regulations of the Patent Law of China sets forth protectable subject matter by defining the term utility models as a ‘’ new technical solution relating to the shape, the structure, or their combination, of a product, which is fit for practical use ’’.The novelty criteria of the inventions for utility model are same as for patent which is based on the publication any where in the world, prior claiming of the invention in the earlier application and prior public knowledge and use in Republic of China. For the purpose of utility model, the inventiveness means the utility model has substantive features and represents progress as compared with the technology existing before the filing date. This is different than what is required for invention patent. For invention patent, in

order to prove, inventiveness, the invention must have prominent substantive features and represent a notable progress[131].

(b) Non protectable subject matter-The law excludes certain invention creations from the protection of patent as well as utility models. They are namely, the invention creation which is contrary to the laws of the States, social morality or that is detrimental to public interest[132]. Scientific discoveries, rules and methods for mental activities, methods for the diagnosis or for the treatment of diseases, animal and plant varieties and substances obtained by means of nuclear transformation are also not entitled for the protection[133].

(c) Preliminary Examination Requirements Examination System. Article 40 provides for a preliminary examination of the applications filed for the registration of utility models. This preliminary examination system for utility models, which is analogous to the formal requirements examination system or the registration system of other countries, requires the Patent Office to grant a utility model for any application on meeting the preliminary examination requirements without cause for rejection, to grant the patent rights for utility models, issue the certificate, register the utility model, and announce the same. It means that utility model rights take effect from the date of announcement. While meeting the requirements of Preliminary Examination, regard must be had to the provisions of rule 44 of the implementing regulations.

(d) Appeal against Rejection: In case, during preliminary examination procedure, the application for utility model fails to meet the requirements of rule 44 of the implementing regulations, the patent office shall inform the applicant about the defects and its opinion and invite him to carry out corrections or submit his observations within the prescribed time. On failure of the applicant, the application will be deemed to have been withdrawn. However, after submission of the observations and corrections by the applicant, the patent office still finds that the application is not in conformity with the law, the application will be rejected[134]. If the applicant is not satisfied with the rejection decision of the patent office, he can, within three months

[131] The Patent law has provisions both for patents and utility models. The novelty and inventiveness are defined in Article 22 of the law.
[132] Article 5
[133] Article 25
[134] Rule 44 of the Implementing Regulations

from the receipt of rejection decision, file a request to the Re-examination Board for Re-examination. If the applicant is still not satisfied with the decision of the Re-examination Board, he can file an appeal in the people's court against the decision of the Re-examination Board within three months form the date of receipt of the Board's decision[135].

(e) Amendment. Article 33 allows an applicant to amend his or her application, but the amendment to the application for a patent for invention or utility model may not go beyond the scope of the disclosure contained in the initial description and claims

(f) Term of protection- According to the provisions of Article 42, the duration of the term of protection for utility models is 10 years from the filing date.

(g) Grace period—The provisions of Article 24 provides a grace period of six months to any invention creation for which patent or utility right has been applied even if such invention creations are exhibited or made public or disclosed to third party, before filing date of the application. In such circumstances novelty of such invention will not be lost. However the grace period is allowed in the circumstances that such invention creation was (1) first exhibited at an international exhibition sponsored or recognized by the Chinese Government, (2) it was first made public at a prescribed academic or technological meeting (3) it was disc1osed by any person without the consent of the applicant.

(h) Priority Right. Article 29 allows priority rights for prior domestic and international applications within 12 months from the date of filing of earlier application.

(i) Search Report Required in case of Infringement Proceedings. Under the provisions of rule 55 of the Implementing Regulations of the Patent Law, after the announcement of the grant of patent for utility model, the utility model rights owner may make a written request to the Patent Office to make a search report on the utility model. After receiving a request the Patent Office shall conduct a search. If the request meets the necessary requirement, the Patent Office shall produce in a timely manner a search report concerning the utility model registration under rule 56 of the Implementing Regulation. However, if the Patent Office determines that the utility model registration fails

[135] Article 41

to meet substantive requirements of novelty and inventiveness under Article 22, it shall state the reasons for this determination with respect to the publications. Under the provisions of rule 57 of the regulations the patent department can correct the mistakes in the patent rights announcement. Further, under Article 57 of the Patent Law, the People's Court or the Patent Office may require a utility model rights owner to submit a search report concerning the registration of the utility model in the event of infringement proceedings. In other words, under these rules, the utility model rights owner is not required to produce the search report to enforce his or her rights, but may be required to produce the search report in the event of an infringement proceeding.

(j) Invalidation and Trial. Any time after the date of announcement of the patent rights for utility models, any entity or individual may make a request under Article 45 to the Patent Re-examination Board to declare the patent right of utility models invalid on the ground that the grant of the patent right is not in conformity with the relevant provision of the Patent Law. Article 46 permits the parties who are not satisfied with the decision of the Patent Re-examination Board, to institute legal proceeding in the People's Court within three months from the date of receipt of the notification. Any patent right which has been declared invalid shall be deemed to be non-existent from the beginning[136].

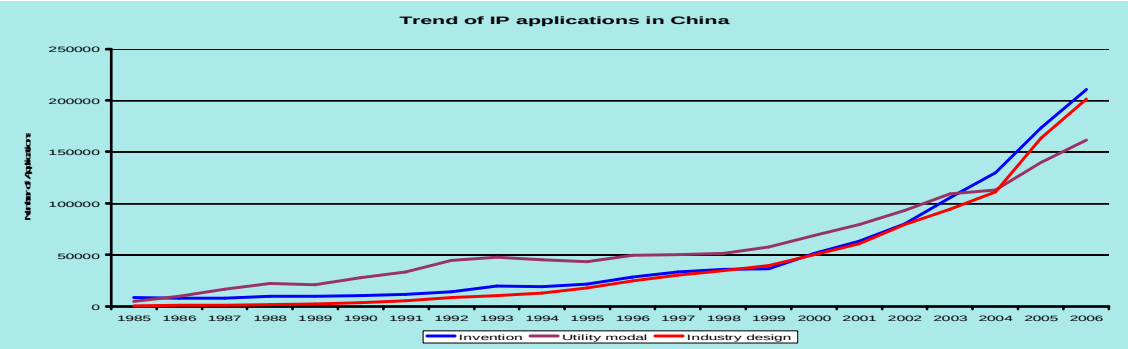
(k) Cross licensing provisions: In case any invention or utility model for which the patent right has been granted involves an important technical advancement of considerable economic significance in relation to another invention or utility model for which a patent right has been granted earlier and the exploitation of the later invention or utility model cannot be done without the exploitation of the earlier invention or utility model, the patent administration department may, grant a compulsory license to exploit the earlier invention or utility model provided a request is made by the later patentee .however on the grant of compulsory license, the earlier patentee, can also be granted a compulsory license to exploit the later invention or utility model on his request[137]

[136] Article 47
[137] Article 50

(l) No Dual Application and no conversion of the application- Article 31 of China's Patent Law prohibits dual application for the same invention in that an application for a patent for invention or utility model shall be limited one invention or utility model. However the application for patent contains two invention or utility models, the applicant may file a divisional application within two months from the date of notification by the patent department. In case the application has been rejected or withdrawn or deemed to have been withdrawn, no divisional application can be filed[138]. Further, if the divisional application has been filed, in such circumstances, the divisional application can not change the kind of protection of the initial application.[139] In other words no conversion of application from patent for invention to utility model or vice versa is possible.

5.1.3 Review of Statistical data –

(a) General review of IP applications-The filing rate of applications for invention patent ,utility models and industrial design in china was growing gradually upto 2000 but thereafter started at very fast pace. Statistical data from the annual report of State Intellectual Property Office (SIPO) are reviewed as below.[140] In 2006, total numbers of 573178 applications for industrial property rights excluding trade marks were filed. Out of these 210,490 were for invention patents, 161,366 for utility models and 201,322 for industrial designs. Trend in the filing rate of these applications indicates increasing growth since 1985 it self when China introduced its patent law for the protection of inventions by invention patent, utility models and industrial designs. However, since 2001 the trend indicated a rapid growth in the filing rate of these applications. The trend is given below.



[138] Rule 42 of the implementation regulations.
[139] ibid
[140]State Intellectual Property Office (SIPO) annual report 2006 is available at its website http://www.sipo.gov.cn/sipo_English/

The above trend also indicates that the utility model protection system has been very popular and successfully exploited in China. The system has been utilized very effectively as number of applications filed for utility models have always been at top and more than invention patent and industrial designs upto 2003.After 2003, the invention patent and industrial design applications have been rapidly growing but utility model applications are not far behind. In fact in 1985, china began with 14,372 applications (8558 for invention patents, 5174 for utility models and just 640 for industrial designs.

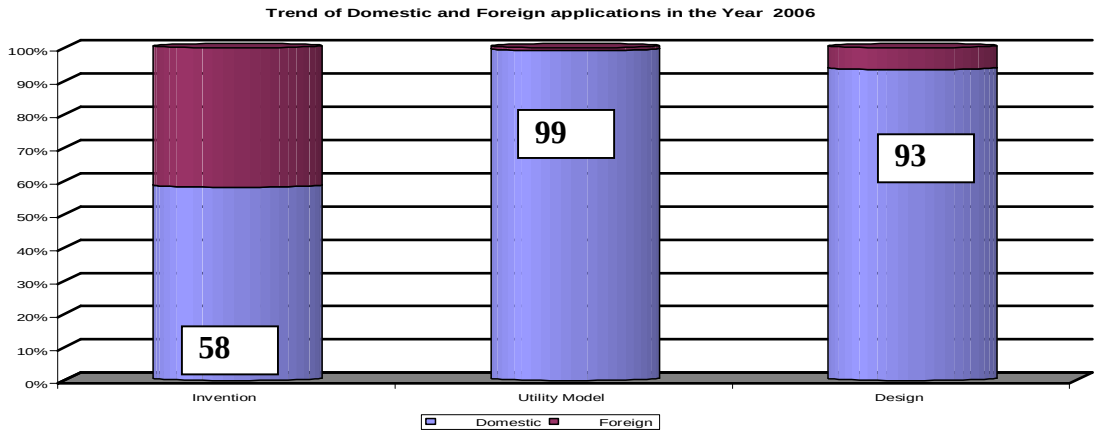
However in 1996, it received over 100,000 applications and over 200,000 in 2001. It is worth noting and interesting that the growth rate of domestic application is far more than the growth in foreign applications even better than the overall growth for all applications. The table below indicates the growth rate of applications from 2000 to 2006 in respect of invention patents, utility models and industrial designs. It also provides for domestic and foreign application for all three sectors.

Number of applications received from domestic and foreign applicants from 2000 to 2006

	Total				**Domestic**				**Foreign**			
	Total	Invention	**Utility Model**	Design	Total	Invention	**Utility Model**	Design	Total	Invention	Utility Model	Design
Accumulated Total	2338622	814451	**764548**	759623	1895336	433548	**757404**	704384	443286	380903	7144	55239
Average Growth Rate(%)	22.4%	26.3%	**15.3%**	26.1%	22.3%	30.0%	**15.2%**	26.2%	22.6%	22.3%	25.3%	24.4%
2000	170682	51747	**68815**	50120	140339	25346	**68461**	46532	30343	26401	354	3588
	27.1%	41.0%	**19.7%**	25.1%	27.6%	62.5%	**19.7%**	25.3%	25.0%	25.1%	27.3%	23.5%
2001	203573	63204	**79722**	60647	165773	30038	**79275**	56460	37800	33166	447	4187
	19.3%	22.1%	**15.8%**	21.0%	18.1%	18.5%	**15.8%**	21.3%	24.6%	25.6%	26.3%	16.7%
2002	252631	80232	**93139**	79260	205544	39806	**92166**	73572	47087	40426	973	5688
	24.1%	26.9%	**16.8%**	30.7%	24.0%	32.5%	**16.3%**	30.3%	24.6%	21.9%	117.7%	35.8%
2003	308487	105318	**109115**	94054	251238	56769	**107842**	86627	57249	48549	1273	7427
	22.1%	31.3%	**17.2%**	18.7%	22.2%	42.6%	**17.0%**	17.7%	21.6%	20.1%	30.8%	30.6%
2004	353807	130133	**112825**	110849	278943	65786	**111578**	101579	74864	64347	1247	9270
	14.7%	23.6%	**3.4%**	17.9%	11.0%	15.9%	**3.5%**	17.3%	30.8%	32.5%	-2.0%	24.8%
2005	476264	173327	**139566**	163371	383157	93485	**138085**	151587	93107	79842	1481	11784
	34.6%	33.2%	**23.7%**	47.4%	37.4%	42.1%	**23.8%**	49.2%	24.4%	24.1%	18.8%	27.1%
2006	573178	210490	**161366**	201322	470342	122318	**159997**	188027	102836	88172	1369	13295
	20.3%	21.4%	**15.6%**	23.2%	22.8%	30.8%	**15.9%**	24.0%	10.4%	10.4%	-7.6%	12.8%

(Source: State Intellectual Property Office (SIPO) annual report 2006)

(b)Trend of domestic applications: The graphical figure given below indicates the trend of applications filed by domestic applicants in 2006.it may be noted that about 58% applications for invention patent are filed by the domestic applicants. However in case of utility model applications, the contribution of domestic applicants in filing is more than 99%.similarly in case of industrial design, the contribution of domestic applicant is about 93%.this trend shows the importance of utility model system as well its effective use by the domestic applicants as the protection under this system is not only very quick and economical but also very convenient.



5.1.4 Role of utility model in the development

The statistical review of the IP applications being filed with State Intellectual Property Office (SIPO) particularly by the domestic applicants illustrate the enormous progress made by china in the area of science and technological development. The utility model rights protection has also played a special role in the technological development as numbers of applications in this area have always dominated other areas until recently. This phenomenon progress has been the outcome of constant efforts in promoting research and development activities by not only gradually increasing the R&D expenditures but also by reforming its S&T system in order to create the conditions for successful R&D and sustainable technological development. In fact, due to huge R&D Activity, China has achieved world's number 3rd spot in terms of R&D spending in 2003[141].

[141] This standing of china has been quoted in the article published at website http://www.youthxchange.net/main/ff4b265_china-q.asp on the basis of a report published by the Organization for Economic Co-operation and Development (OECD).

According to the OECD report, China's R&D expenditure reached US$60bn, after the US ($282bn) and Japan ($104bn). About 60% of such spending came from domestic and foreign firms and the rest from the government. In terms of percentage of GDP, its R&D expenditure has gone up from 0.6% in 1996, to 1.3% in 2003. In terms of scientific human resources, in 2002, China had the second highest number of researchers in the world (811,000); Further, the number of papers published by Chinese scientists in journals included in the *Science Citation Index* had increased from 5,408 in 1991 to 35,685 in 2001 moving China's rank in the world up from 15 to 8[142].

China is also receiving largest part of Foreign Direct Investment (FDI) among the developing economies followed by Hong Kong China[143].China's exports have also increased from about 6% in 1990 to 23% in 2002.now the R&D expenditure by private sector (57%), is more than the government. There are 4,347 research institutes and out of these, 744 are directly supervised by the central government, including the 98 institutes that comprise the Chinese Academy of Sciences which account for 70.3 billion Yuan (about US$8.49 billion) in S&T spending, which represented 24% of China's S&T funding.[144]

Considering the huge market in China, almost all the global giants in automobile, telecommunications technology, computer, software, machinery, electronics, biotechnology, pharmaceuticals and other major industries have made high-tech investments in China. Since 2001, at least 6 major Japanese firms namely NEC, Oki Electric, Sony, Toshiba, Hitachi, Fujitsu and Matsushita Electric have either set up new R&D centers or concluded R&D joint ventures with Chinese partners[145]. The above developments coupled with enhanced intellectual property creation culture and enormous efforts in promoting R&D activities seem to have played very important role in the economic and technological development.

[142] These figures are based on the information provided at the website of youth Exchange visited on August 10, 2007 at http://www.youthxchange.net/main/ff4b265_china-q.asp.
[143] World Investment Report 2006 available at UNCTAD http://website www.unctad.org
[144] According to the article, published on the website of youth Exchange, visited on August 10, 2007 at http://www.youthxchange.net/main/ff4b265_china-q.asp.
[145] ibid

5.2 SOUTH KOREA

5.2.1 Historical development of utility model: South Korea, as in the case of Japan, had its first time utility model protection system in 1908. The first patent law having unified law including utility model and design was enacted in 1946[146]. However, Korea enacted its first Utility Model Act in 1961, which was also modelled in large par after the Japanese Utility Model Law. Over the years, the number of patent and utility model applications increased tremendously which placed a huge burden on the Korean Intellectual Property Office （KIPO）.Up to 1997, it used to take an average time of 36 months to conduct a substantive examination for each application. As the products of utility model innovations have shorter commercial and marketing lifecycles and require immediate commercialization in order to be profitable, this time-consuming examination process for utility models harmed the utility model innovators particularly SMEs. In order to deal with these problems, the Korean government made large-scale amendments to its Utility Model Act in 1998. Due to domestic economic development and social needs, however, the law which is currently in force with effect from May 11, 2003, was last amended in 2002 by Act No. 6766, December 11, 2002.

5.2.2 Existing law and regulations:

(a) Protectable Subject Matter: According to the article 5 (1), a utility model may be granted for the devices which are industrially applicable and which relate to the shape or structure of an article or a combination of articles. Therefore Process and substances are not protectable subject matter in South Korea. The device has been defined as the creation of technical ideas using the rules of nature[147]. As far as novelty of the device is concerned, it is provided that, devices which are publicly known or worked in the Republic of Korea before the filing date of the utility model application or devices described in a publication distributed in the Republic of Korea or in a foreign country before the filing date of the utility model application or made available to the public through electronic telecommunication lines cannot be registered as utility models.

[146] Takeyuki Iwai,`Modalities of future utility model system`IIP Bulletin 2004,pp44
[147] Article 2

Further, utility model registration is also not possible for a device for which a utility model application is filed, is identical to a device or an invention described in the description or drawing(s) originally attached to another utility model application or a patent application, and where the other utility model application was filed before the utility model application and published after registration for public inspection after the filing date of utility model application. However, this is not applicable where the inventor of the utility model application and the inventor of the other utility model or patent application are the same person or where the applicant of the utility model application and the applicant of the other utility model or patent application are the same person at the time of filing[148]. As far as inventiveness of the device is concerned, it is provided that a utility model registration may not be granted to such device which could easily have been made before the filing of the utility model application by a person with ordinary skill in the art to which the device pertains[149].

(b) Non-Registerable devices: There are certain devices which are excluded from the registration. The non-registerable devices include the devices which are identical with or similar to the national flag or decorations; or devices liable to contravene public order or morality or to injure the public health[150].

(c) First to file rule: Provisions of Article 8 provide that where two or more applications related to the same device are filed on different dates, only the applicant with the earlier filing date may obtain a utility model registration for the device. Similarly where two or more applications related to the same device are filed on the same date, only the person agreed upon by all the applicants after consultation may obtain a utility model registration for the device. If no agreement is reached or no consultation is possible, none of the applicants may obtain a utility model registration for the device. Further where a utility model application has the same subject matter as a patent application and the applications are filed on different dates, the applicant of the utility model application may obtain a utility model registration for the device only if the utility model application has the earlier filing date. However in case where a utility model application has the same subject matter as a patent

[148] Article 5(3)
[149] Article 5(2)
[150] Article 7

application and the applications are filed on the same date, a utility model application may be registered only if an agreement is reached between the utility model applicant and the patent applicant that only the utility model application would be registered. These provisions are similar to that of Japan.

(d) Examination of utility model applications: The utility models are registered on the basis of formal examination[151]. During formal examination the examiner would consider as to whether the device in the utility model application is related to the shape or structure of an article or a combination of articles and also as to whether other formal requirements as prescribed under the law are complied with. It is also provided in Article 10 that a utility model application must relate to a single device only, unless a group of devices is linked to form a single general device concept.

(e) Registration procedure: Article 35(2) states that the Commissioner of the Korean Intellectual Property Office （KIPO）shall register the establishment of a utility model right except where the utility model application fails to meet procedural and formal requirements under Article 11 or other basic requirements under Article 12, or where the application has been abandoned or withdrawn.

(f) Publication and opposition: After registration of rights, the utility models are published in the official gazette.[152]After publication of registration, the application with other document is made available for public inspection for the three months and any person may submit to the Commissioner of the Korean Intellectual Property Office information with supporting evidence that the device falls under Article 25(1) of the Act. However, within three months from the date of publication of the registration of utility model rights any person can file the opposition as prescribed under article 47 of the Act. This provision is in contrast to the Japanese system, which does not allow opposition to the examiner's decision,

(g) Technical Evaluation: Any person can make a request for technical evaluation of a device claimed in a utility model application or registered utility model under Article 21(1).The request for technical evaluation can also be made even after the extinguishment of utility model right but not when the

[151] Formal examination is conducted in accordance with the provisions of Article 12
[152] Article 35(3)

utility model rights have already be invalidated under invalidation trial or revoked. Under Article 24 a specialized organization may search prior art relating to the utility model. The technical evaluation also acts as a post registration substantive examination. If after technical evaluation, the utility model registration fails to meet substantive requirement as prescribed under Article 25(1), the registration of utility model is revoked and on becoming the decision final, the utility model rights are deemed to have never existed. However, if the utility model does not fall within any of the categories as mentioned therein, a decision to maintain the utility model registration under Article 25(2) is made. An appeal may not be made against the decision to maintain a utility model registration. However uunder Article 54, any person who disagrees with the decision revoking the registration may request a trial within 30 days from the date of receipt of a certified copy the ruling.

(h) Infringement of rights: Under Article 43, any Commercial act of manufacturing, assigning, leasing or importing, or the act of offering for commercial or industrial assignment or lease, of goods used exclusively for manufacturing a product related to a utility model registration are considered to infringe a utility model right or an exclusive license under the utility model registration. Therefore an owner of utility model right or an exclusive licensee may exercise his right against a person who infringes his utility model right or exclusive license only after he provides warning to that person by presenting a copy of the certificate of decision of maintenance[153]. However, the utility model rights owner or an exclusive licensee is liable for damages caused as a result of such exercise of rights or warning where there has been final and conclusive decision of revocation concerning the utility model registration[154].

(i) Trial for Invalidation: Article 49 allows any interested party or even an examiner to make a request for a trial to invalidate a utility model registration. This invalidation request can be filed even after extinguishment of the utility model rights. Where a trial decision invalidating a utility model registration has become final, the utility model right is deemed never to have existed. The trial can also be requested by the owner of the utility model for the amendments

[153] Article 44
[154] Article 45(1)

and corrections in the description or the drawings and also for the confirmation of the scope of utility model rights.

(j) Priority Right: Article 18 allows priority for earlier applications based on utility model or patent application within 12 months from the date of filing of earlier application However this is subject to certain other conditions as laid down therein. Moreover, the provisions of Article 60 provide some special provisions for claiming the priority based on international application filed for patent or utility models. Further, Article 57 provides to file an international application for utility model if the Republic of Korea has been designated in the international application for utility model under PCT.

(k) Amendment of Application and Correction of Utility Model Registration: Article 13(1) allows the applicant to amend the application only when the utility model application is pending, but the specification, drawing, and abstract attached to a utility model application may not be amended after a time limit from the filing date of the utility model application. Article 27 provides provisions relating to make corrections to narrowing the claims, correcting clerical errors, or clarifying ambiguous descriptions in the specification.

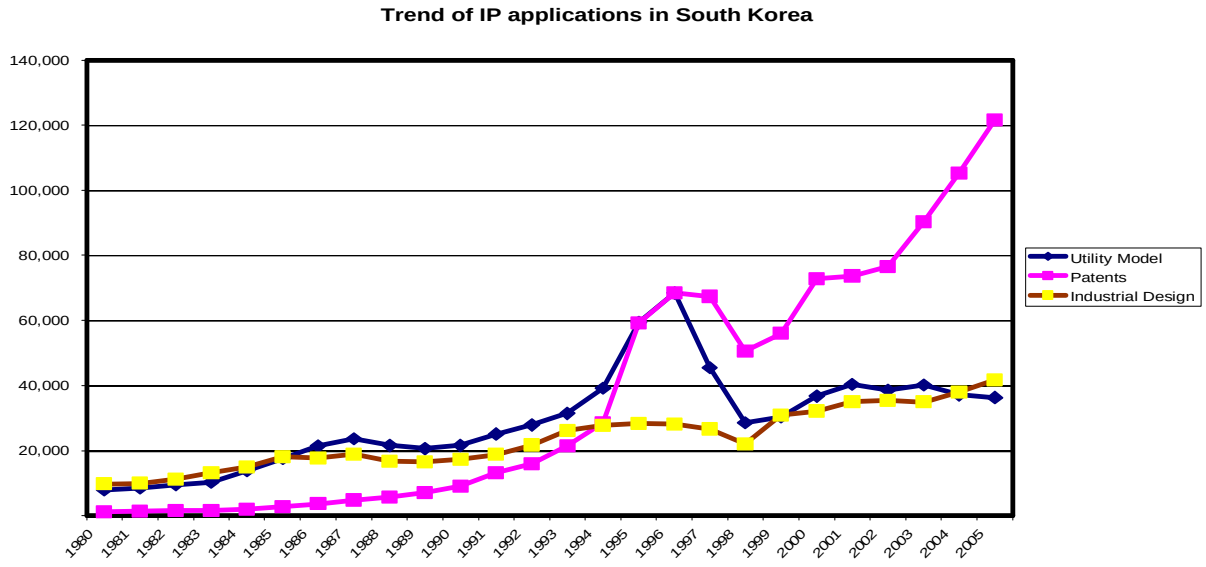
(l) Term of Protection: The term of protection for utility models after their registration, according to the provisions of Article 36（1）is 10 years from the filing date. However, this term is also governed with other provisions of Article 36.

(m) Dual Application, but No Dual Protection. **:** Article 17 Act allows any person who has filed a patent application to file a utility model application that is within the scope of the original specification attached to the patent application as long as the utility model application is filed prior to the receipt of a certified copy of the decision to grant a patent. However, the establishment of a patent right can be registered only if the corresponding utility model right is abandoned under Article 86（2） of South Korea's Patent Act. Therefore, South Korea's patent and utility model systems do not allow dual protection.

(n) Grace period: The law provides a period of six months as a grace period under Article 6 after publication of the utility model invention to file application. However, the applicant is required to submit, within thirty days of the filing date of the utility model application, a document proving the relevant facts.

5.2.3 Review of Statistical data: The statistical data as reviewed below is based on the statistical information provided on the website of the Korean Intellectual Property Office (KIPO)[155].

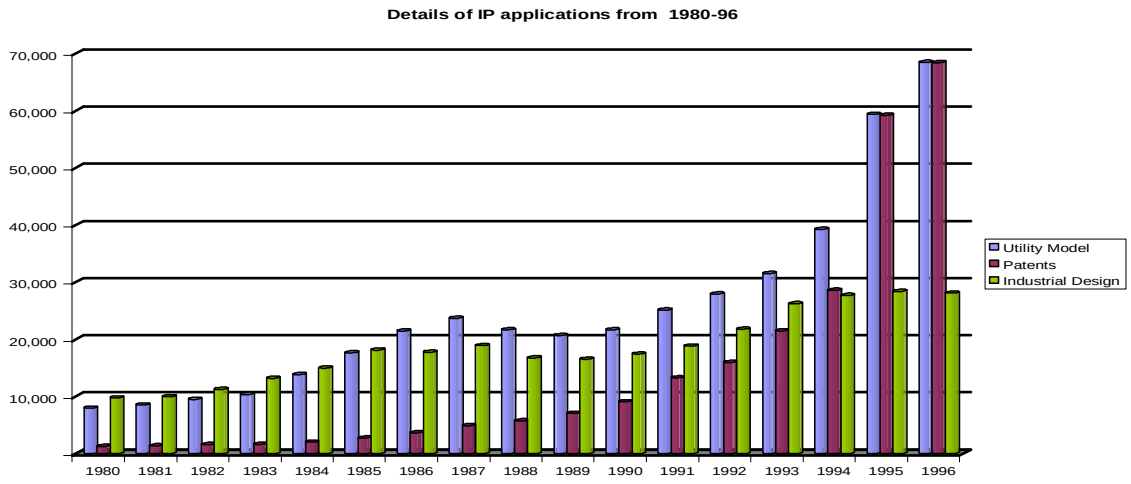
(a)Trend of IP applications from 1980 to 2005: The trend in the filing rate of the applications filed for patent, utility models and industrial designs is indicated below in the graphical figure from 1980 to 2005.Although now the number of applications for patent and industrial designs filed are more than the utility models but still the utility model applications filed are more than over 35,000 applications per year. However in the past the utility model applications dominated over the patents and industrial designs.



(Source: Korean Intellectual Property Office information at Website at http://www.kipo.go.kr/)

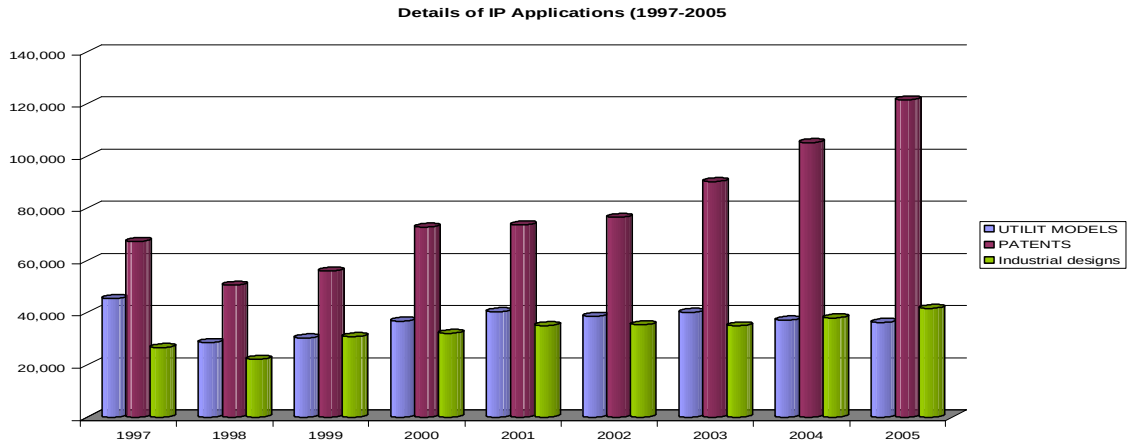
(b) Trend of IP applications from 1980 to 1996: The graphical figure given below indicates the trend of applications filed from 1980 to 1996.The trend indicates the fact that there have been more innovative activities in this area and also the trend of industries to utilize the utility model system more vigorously than patent so as to commercialize their utility model products as early as possible due to the flexibilities provided in the system for early registration of the utility model rights.

[155] http://www.kipo.go.kr/



(Source: Korean Intellectual Property Office information at Website at http://www.kipo.go.kr/)

(c) Trend of IP applications from 1997 to 2005: The graphical figure given below indicates the trend of applications filed from 1997 to 2005.The trend indicates the fact that there have been more activities for utility model applications than industrial designs until 2003.This shows the facts that the system is still very popular in the country. The numbers of applications for utility models are not far behind the industrial design applications.



(d) Domestic applicants vs. Foreign applicants: The trend of applications filed by the domestic applicants is given in the table below[156].It can be seen, that the applications filed by domestic applicants are much higher than the foreign applicants. For instance, the patent applications are filed between 70 to 77 % and showing a increasingly growing filing rate. Similarly for utility models and industrial designs, they are filed between 98 to 99% and 92 to 95% respectively.

[156] Annual Report 2006 of Korean Intellectual Property Office available at its Website http://www.kipo.go.kr/)

Table -Trend of applications filed by Domestic and Foreign Applicants

Year	Patent			Utility Model			Industrial Design		
	Domestic	%	Foreign	Domestic	%	Foreign	Domestic	%	Foreign
2001	73714	70.5	30898	40398	99.0	415	35074	95.1	1793
2002	76570	72.1	29566	38662	98.6	531	35399	94.2	2188
2003	90313	76.1	28339	40174	98.4	651	34994	93.1	2613
2004	105250	75.1	34865	37167	98.4	586	38041	92.4	3143
2005	121610	77.4	35504	36312	98.3	633	41686	92.7	3271

The above trend of filing of utility models by the domestic applicants further reaffirms the facts that the utility model is fully utilized more and more by the domestic applicants rather than the foreign applicants. Therefore it can be inferred that the utility model system not only promotes but also encourages the innovative activities of domestic innovators and industries which ultimately contribute to the economical and technological development of the country and technological up-gradation.

5.3. Utility model system in Other Asian Countries:

Apart from, Japan, China and South Korea many Asian countries have adopted the utility model system in order to promote the innovation activities of the innovators, particularly local innovators including SMEs, which are very important for early commercialization due to their practical usefulness in the daily life products.

Table - The utility model system in some Asia Countries

Countries	Mongolia	Viet Nam	Thailand	Indonesia	Philippines	Malaysia	Taiwan China
Utility model	Utility model	Utility Solutions	Petty Patent	Simple patent	Utility model	utility innovation	Utility model
Substantive Examination	No	Yes	No	No, but there is a provision	Yes	Yes	No
Converted into invention	Yes	Yes	Yes	No	Yes	yes	Yes
Inventive step	No	No	No	No	No	No	No
Term of Protection	7	10	6 +2+2	10	7 years	10	10

Although, the provisions in the above mentioned table indicates that utility model protection system is somewhat similar to each other but are known by

different names. For instance, in Taiwan China, Philippines and Mongolia, it is known as utility models but in Vietnam it is known as utility solutions. In Thailand, the system is known as petty patent whereas in Indonesia it is known as simple Patent. However, Malaysia calls the system as utility innovation certificate system. The utility model system is very successful in Taiwan China and to some extent in Thailand and Philippines. However in Vietnam, Indonesia, Mongolia, and Malaysia, number of applications for utility models are very less but same is the case with applications for patents and industrial designs. Therefore in order to show the trend in other Asian countries the numbers of applications filed for utility model protection only in Taiwan China, Thailand, Indonesia and Philippines are represented in the graphical figures and tables given below.

5.3.1.Taiwan China: The table given below indicates the trend of filing of applications for patent, utility models and industrial designs from 1998 to 2005[157].it may be observed that utility model applications dominated the filing rate over the patent and industrial design applications until 1998. However these applications are still far more than the industrial design applications. This indicates further the importance, popularity and use of system.

Table -Trend of applications from 1998 to 2005

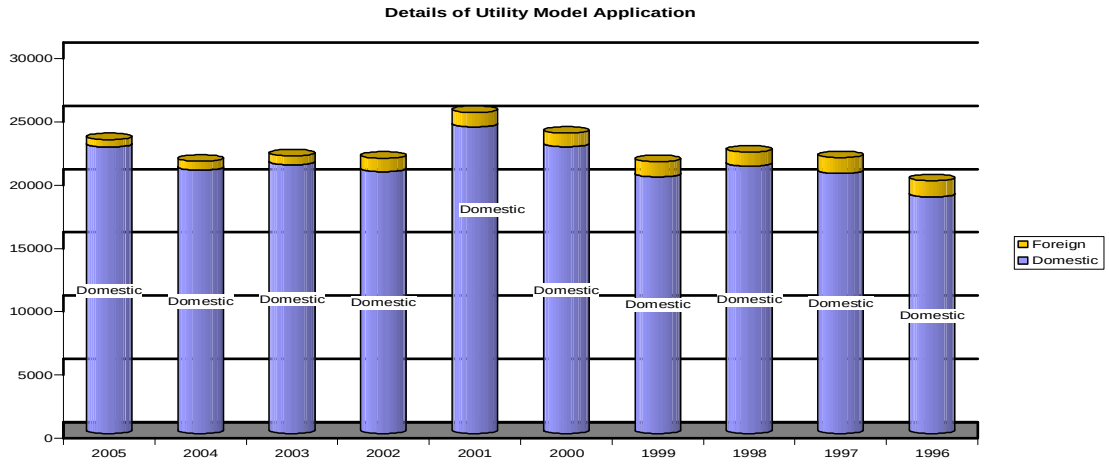
	1998	1999	2000	2001	2002	2003	2004	2005
Patents	21978	22161	28451	33392	31616	35823	41919	47841
Utility Models	22235	21481	23728	25370	21750	21935	21518	23226
Industrial Designs	9790	8279	9052	9098	8036	7984	8645	8375

（Source: http://www.tipo.gov.tw/eng/)

(a) Trend of applications by domestic applicants: As usual in Taiwan China also the utility model applications are filed mostly by the domestic applicants rather than the foreign applicants as indicated in the figure below. this trend also indicate the promotion of protection of small innovations by the domestic applicants and thereby enabling the early commercialization of upgraded technologies of such innovations. In fact, utility patent appeal to

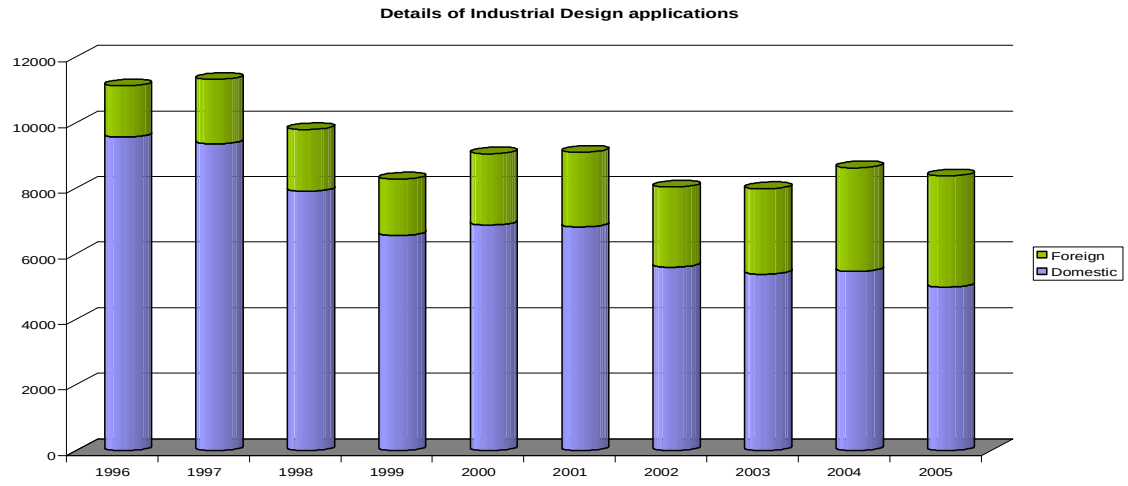
[157] The filing figures of applications for patent ,utility models and industrial designs are based on the information available at intellectual property office website of Taiwan China http://www.tipo.gov.tw/eng/

Taiwan China as 98%of the country business are small and medium sized enterprises(SMEs) with very diverse R&D capabilities[158].



(Source: Based on Information available at http://www.tipo.gov.tw/eng/)

(b) Industrial designs-Similarly the figure below also indicates the trend of domestic applicants in filing of the applications for industrial designs in Taiwan China.



(Source: Based on Information available at http://www.tipo.gov.tw/eng/)

5.3.2. Indonesia: The following table also indicates the trend of applications for patent and petty patents now called simple patents filed in Indonesia from 1991 to 2006[159].Trend For Utility Models or petty patent is same as in other countries for domestic applicants.

[158] Uma Suthersanen-Utility Models and Innovation in developing Countries, February 2006-UNCTAD-ICTSD Project on IPRs and Sustainable Development, Issue paper No.13, pp24-25 available at http://www.unctad.org/en/docs/iteipc20066_en.pdf and last seen on August 23,2007

[159] This information is available at Directorate General of Intellectual Property Office of Indonesia website: http://www.dgip.go.id

STATISTIC OF PATENT REGISTRATION

YEAR/MOUNTH	PATENT				PETTY PATENT		TOTAL
	DOMESTIC	PCT	FOREIGN	PCT	DOMESTIC	FOREIGN	
1991	34		1280		19	3	1336
1992	67		3905		12	43	4027
1993	38		2031		28	43	2140
1994	29		2305		33	60	2427
1995	61		2813		61	71	3006
1996	40		3957		59	76	4132
1997	79		3939		80	80	4178
1998	93		1608	145	109	32	1987
1999	152		1051	1733	168	19	3123
2000	156	1	983	2750	213	38	4141
2001	208	4	813	2901	197	24	4147
2002	228	6	633	2976	157	48	4048
2003	201		479	2620	163	29	3492
2004	226	1	452	2989	177	32	3877
2005	234	1	533	3536	163	32	4499
2006	282	6	519	3805	242	26	4880
2007							
JANUARY	13		31	358	17	2	421
FEBRUARY	27		29	342	20	3	421
MARCH	13		39	356	25	3	436
APRIL	16		38	308	20		382
MAY							
JUNY							
JULY							
AUGUST							
SEPTEMBER							
OCTOBER							
NOVEMBER							
DECEMBER							
TOTAL	2197	19	27438	24819	1963	664	57100
%	3.85%	0.03%	48.05%	43.47%	3.44%	1.16%	100.00%

(Source http://www.dgip.go.id/)

5.3.3. Thailand: The following table also indicates the trend of applications for petty patents filed and registration thereof in Indonesia from 1999 to 2005[160].Trend for utility models or petty patent is same as in other countries for domestic applicants.

Table -Number of Petty Patents in Thailand

Year	Application			Registration		
	Total	**Thai**	**Foreigner**	**Total**	**Thai**	**Foreigner**
2005	**1,652**	1,561	91	**609**	592	17
2004	**1,454**	1,390	64	**392**	364	28
2003	**1,344**	1,290	54	**487**	476	11
2002	**1,222**	1,148	74	**389**	376	13
2001	**811**	745	66	**392**	341	51
2000	**616**	555	61	**125**	108	17
1999	**202**	185	17	**7**	7	0
Total	**7,301**	**6,874**	**427**	**2,401**	**2,264**	**137**

(Source: http://www.ipthailand.org/dip)

5.3.4.Philippines: The table given below shows a trend of applications filed in Philippines for patent, designs and utility models from 1997 to 2006[161]. Although the number of applications filed for utility models are very small as compared to China, Korea or Taiwan China but the number of applications filed for patents and designs are also less comparably. However the trend is

[160] This is based on the information available at website of Department of Intellectual Property Thailand , http://www.ipthailand.org/dip/

[161] This is based on the information available at website of Intellectual Property Office Philippines ,http://www.ipophil.gov.ph/

also indicated that the domestic (nationals) applicants are filing more applications for utility models than that of patents and designs. This means that they are protecting their innovations by utility models more than by the patents. This is quite obvious for the reasons that the utility model registration is easy and fast and also enabling the innovators quick rights for early commercialization of their innovated products. The statistics as shown only reflect that utility model system promotes protection of small inventions or inventions having comparatively less inventiveness are well protected by the system and it is very effective for local applicants in order to encourage them.

Table -Details of IP applications in Philippines:

Year	Nature of applications	**Patents**	**Utility Models**	**Designs**
	Foreign	3034	24	485
	Domestic	**231**	**515**	**477**
2006	Total	3265	539	962
	Foreign	410	27	619
	Domestic	**210**	**519**	**649**
2005	Total	620	546	1268
	Foreign	413	19	476
	Domestic	157	**573**	539
2004	Total	570	592	1015
	Foreign	433	21	343
	Domestic	141	**477**	667
2003	Total	574	498	1010
	Foreign	705	39	335
	Domestic	149	**522**	448
2002	Total		561	
	Foreign	2470	21	316
	Domestic	135	**429**	382
2001	Total	2605	450	698
	Foreign	3482	36	340
	Domestic	154	**536**	479
2000	Total		572	
	Foreign	3217	41	252
	Domestic	144	**606**	515
1999	Total	3361	647	767
	Foreign	3280	31	227
	Domestic	163	**602**	499
1998	Total	3443	633	726
	Foreign	3440	66	296
	Domestic	125	**517**	582
1997	Total	3565	583	878

5.4. BRAZIL

5.4.1 Historical development of utility model law

The first Brazilian Industrial property law was the License (The term in Portuguese is “Alvará”) of 28 April of 1809. Under this law, the inventors and creators of inventions and some new machine could enjoy the exclusive privilege. The second Brazilian Industrial Property Law (Law number 3.129, from 14/10/1882) granted patent to the improvement of inventions already privileged to make easy the production of a product or use of invention, or for their utility. However the first legal manifestation of the terms: “utility model” was in the Decree number 16.254, from 19/12/1923and , before this law, only term used was the improvement of invention which could be granted, protection under the law. After that, others decrees and laws, protecting utility models, came in force: 2.450 Law (29/06/1934),7.903 Law (27/08/1945), 1.005 Law (21/10/1969), 5.648 Law (11/12/1970), Industrial Property Code number 5.772/71 and the Industrial Property Law number 9.279 enacted on 15/05/1996, but came into force since 15/05/1997.The present industrial property law (LPI 9279/96) has come into force since 14/05/1997after one year of its publication: 14/05/1996[162].

5.4.2 Existing law and regulations[163]: The existing law in Brazil was enacted with the objective that the protection of industrial property rights is afforded by means of the granting the invention and utility model patents by considering the social interest, the technological and economic development of the country[164]. Under this law the provisions are provided to protect the inventions by patents, industrial designs, and certain inventions relating to practical use by utility models. The trademarks are also registered under this law. The main provisions of the law in respect of protection of utility models are as follows.

(a) Protectable subject matter:—To be patentable an invention must meet the requirements of novelty, inventive activity and industrial application[165]. According to provisions of Article 9, an object of practical use or part thereof, is patentable as a utility model, when it is susceptible of industrial application,

[162] The is based on the information provided on the website of National Institute of Industrial Property (INPI) which was visited on August,7,2007 at http://www.inpi.gov.br/legislacao/propriedade.htm?tr1
[163] The existing law in English is also available at WIPO website) which was also visited on August,7,2007 at: http://www.wipo.int/clea/en/fiche.jsp?uid=br003
[164] Article -2 of Industrial Property Law No. 9,279, of May 14, 1996
[165] Article-8

presents a new shape or arrangement and involves an inventive act that results in a functional improvement in its use or manufacture. Therefore the inventions which are related to new shape or arrangements having a practical use resulting into a functional improvement in there are protected as utility models. As regard novelty, the iinventions and utility models are considered to be new when not included in the state of the art[166].the state of the art comprises everything made accessible to the public before the date of filing of a patent application, by written or oral description, by use or any other means, in Brazil or abroad.[167] Therefore the law provides the global novelty criteria. It is further provided that for the purpose of determining novelty, the whole contents of an application filed in Brazil, but not yet published, will be considered as state of the art from the date of filing, or from the priority claimed, provided that it is published, even though subsequently. The provisions of Articles 14 and also define the terms 'inventive act' and `industrial application respectively. It provides that a utility model shall be taken to involve an inventive act when, for a person skilled in the art, it does not derive in a common or usual manner from the state of the art. Similarly, inventions and utility models are considered to be susceptible of industrial application when they can be made or used in any kind of industry.

(b) Subject matter not an invention or utility model: —According to the provisions of Article 10,the following subject matters are not are not considered as an invention or utility model

- Discoveries, scientific theories and mathematical methods;
- purely abstract concepts;
- schemes, plans, principles or methods of a commercial, accounting, financial, educational, publishing, lottery or fiscal nature;
- literary, architectural, artistic and scientific works or any aesthetic creation;
- computer programs per se;
- the presentation of information;
- rules of games;
- operating or surgical techniques and therapeutic or diagnostic methods, for use on the human or animal body; and
- natural living beings, in whole or in part, and biological material**,** including the genome or germ-plasm of any natural living being, when found in nature or isolated there from, and natural biological processes.

[166] Article-11
[167] Article-11(1)

(c) Non-patentable Inventions and Utility Models:—**A**ccording to Article 18 ,the following subject matters of invention are not patentable for grant of patents and utility models:

- that which is contrary to morals, good customs and public security, order and health;
- substances, matter, mixtures, elements or products of any kind, as well as the modification of their physical-chemical properties and the respective processes of obtaining or modifying them, when they result from the transformation of the atomic nucleus; and,
- living beings, in whole or in part, except transgenic micro-organisms meeting the three patentability requirements - novelty, inventive activity and industrial application and which are not mere discoveries.

(d) Grace period: The law provides a grace period of twelve months for filing the application even if the disclosure of the invention is published prior to the filing of the application and thereby not affecting the novelty of the invention. Accordingly provides that the disclosure of an invention or utility model which occurs during the twelve months preceding the date of filing or priority of the application will not be considered as part of the state of the art, provided such disclosure is made by(a) the inventor,(b) the National Institute of Industrial Property by means of the official publication of a patent application filed without the consent of the inventor and based on information obtained from him or as a result of his acts; or(c) third parties, on the basis of information received directly or indirectly from the inventor or as the result of his acts[168].However, National Institute of Industrial Property, may require the inventor to provide a declaration relating to the disclosure, accompanied or not by proof, under the conditions established in the rules.

(e) Priority of national and international application:—The provisions of article 16 provide that the priority rights will be provided to a patent application filed in a country that maintains an agreement with Brazil or in an international organization that produces the effect of a national filing, within the time limits established in the agreement, the filing not being invalidated nor prejudiced by facts that occur within such time limits. An application for a patent of invention

[168] Article-12

or for a utility model originally filed in Brazil, without a priority claim and not yet published, will guarantee a right of priority to a later application in respect of the same subject matter filed in Brazil by the same applicant or by his successors, within the period of one year. However, priority will only be recognized for subject matter that is disclosed in the earlier application and will not extend to any new matter that is introduced. Further a patent application resulting from the division of an earlier application cannot serve as the basis for a priority claim[169].

(f) Requirement for filing the application:-An application for patent or utility model can be filed as per the prescribed regulations established by the National Institute of Industrial Property. The application should contain a request, the specifications, Claims, drawings, if applicable, the abstract; and proof of payment of the filing fee. While filing the application for a utility mode, the disclosure in specification must refer to a single principal model that may include a plurality of distinct additional elements or structural or configurative variations, provided that technical-functional and corporeal unity of the object is maintained[170].

(g) Term of protection- According to Article 40, a patent of invention is protected for a term of 20 (twenty) years and a utility model patent for a term of 15 (fifteen) years counted from the filing date. However, the term will not be less than 10 (ten) years for patents of invention and 7 (seven) years for utility model patents counted from the date of grant.

(h) Amendments and correction:—The amendments or correction in the application for utility model or patent can be effected up to the date of filing the request for examination of the application provided that they are limited to the subject matter initially disclosed in the application[171].

(i) Examination of the application: - A substantive examination of a patent application or utility model application is carried out considering all aspect of the patentability under the law including novelty, inventive act and industrial allocation. The Brazilian provisions are different than Japan, Germany China and Korea where utility models are registered on the basis of formality check

[169] Article-17
[170] Article-30
[171] Article-32

examination. According to Brazilian law, examination of the utility model or patent application must be requested by the applicant or by any interested party, within 36 (thirty-six) months counted from the date of filing of the application[172].

(j) Publication of the applications: All applications for patent are published after expiry of statutory period of eighteen months. According to the provisions of article 30, a patent application will be kept secret during 18 (eighteen) months counted from the date of filing or of the earliest priority, if any, after which it will be published except the application which relates to national defense[173]. An early publication of the application may be anticipated on request by the applicant.The same provisions are applicable for utility models.

(k) Rights of the right holder: According to article 42, a patent confers on its proprietor the right to prevent third parties from manufacturing, using, offering for sale, selling or importing for such purposes without his consent, a product that is the subject of a patent and a process, or product directly obtained by a patented process. The patentee is further guaranteed the right to prevent third parties from contributing to the practice by other parties of the acts. The same provisions are applicable for utility models.

(l) No dual protection: There is no provision in the law to provide dual protection to the invention as invention patent and utility models simultaneously.

(m) Conversion of the application: Although, there is no specific provision in the law to allow the conversion of the application from patent to utility model or vice versa, but on the examination of the application, if the applicant is permitted by the examiner to convert the application to utility model, he can do so[174].

(n) Administrative Nullity Procedure: Provisions of Article 50 provide that nullity of a patent will be declared administratively when any of the legal requisites have not been met, the description in the specification is insufficient and the claims are not based on the disclosure in the specification, the subject

[172] Article 33
[173] Article 75
[174]This is based on the discussion with one of the officials of National Institute of Industrial Property of Brazil

of protection of the patent extends beyond the contents of the application as originally filed or any of the essential formalities indispensable for grant were omitted during prosecution. The same provisions are applicable for utility models.

(o) Nullity actions: The nullity procedure may be instituted *ex officio* or at the request of any person having legitimate interest within 6 (six) months counted from the date of grant of the patent and the nullity procedure will continue even if the patent is extinct[175]. A nullity action can be filed at any time during the term of a patent by INPI or by any legitimately interested party. Nullity of a patent may also be argued, at any time, as matter for defense. The judge while considering the nullity action may, as a preventive or incidental measure, determine the suspension of the effects of a patent, provided the relevant procedural requirements are met[176]. Nullity actions will be adjudged in the forum of the Federal Courts only.

(p) Penal provisions: The law also prescribes certain penal provisions under Article 183,184,185 and 186 against the crimes committed in violation of rights conferred by patent or utility models.

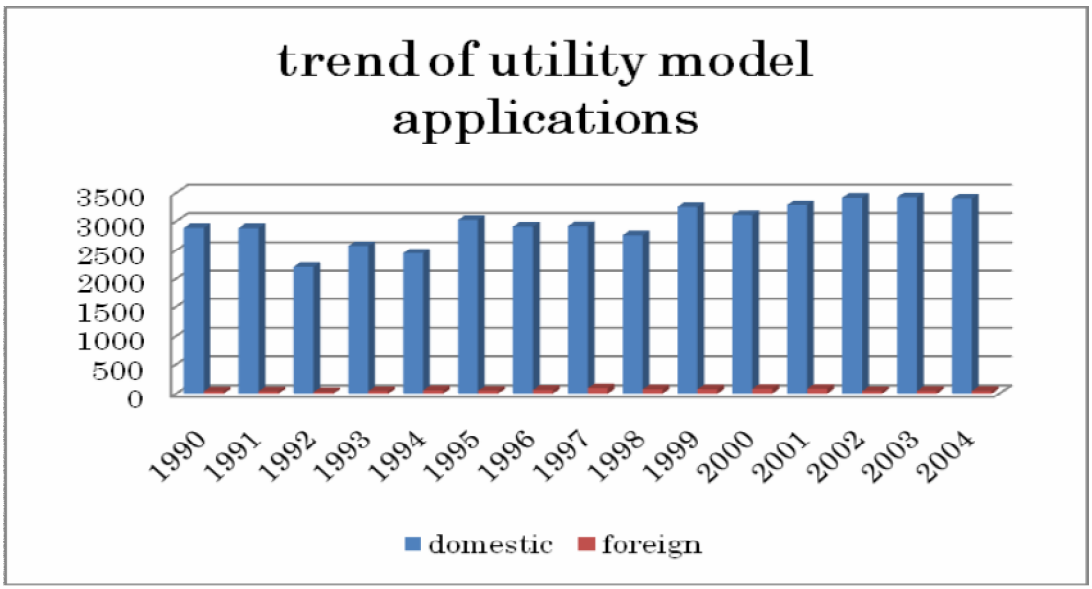
5.4.3 Review of statistical data: The details of the applications filed for the invention patents and utility models filed in the Brazilian Intellectual Property Office are given in the tables given below[177].

(a) Trend of Utility model applications: The details of applications filed for utility models by the domestic applicants and foreign applicant from 1992 to 2004 are given in the table below.

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Domestic	2207	2575	2446	3024	2911	2916	2762	3247	3104	3280	3416	3425	3403
Foreign	26	43	59	50	64	94	75	76	85	86	46	47	47
Total	2233	2618	2505	3074	2975	3010	2837	3323	3189	3366	3462	3472	3450

(Source: National Institute of Industrial Property, website http://www.inpi.gov.br/)

[175] Article-51
[176] Article-56
[177] The details of industrial applications are based on the information available at National Institute of Industrial Property of Brazil website http://www.inpi.gov.br/)



It can be observed from the above graphical presentation that the filing rate of utility model applications are comprehensively dominated by the domestic applicants as compared to foreign applicants.The ratio between domestic and foreign applications is also increasingly growing.It indicates that research and development activities among the domestic applicants are increasing although the level of innovation ingenuity may be comparatively lower.Neverthless,as the number of the applications filed by the domesctic applicants are increasing,it can be inferred very clearly that utility model system is fully utilised by the domestic applicants and infact this system not only support but also encourage the domestic innovators or creators in creating and protecting their innovation activities quickly in order to exploit them within short .

(b) Trend of applications for invention patent: The table given below indicates the trend of applications filed by the resident applicants and foreign applicants from 1990 to 2005.

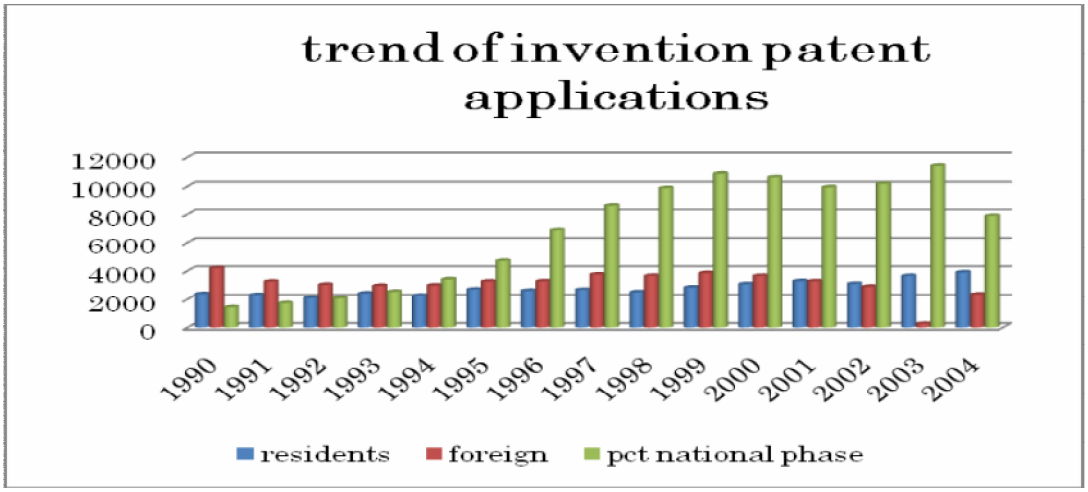
Details of applications for invention patent from 1990 to 2004

Year	Applications Residents	Applications foreign	PCT National Phase	Total
1990	2389	4191	1436	8016
1991	2319	3263	1724	7306
1992	2100	3030	2074	7204
1993	2429	2958	2543	7930
1994	2269	2985	3417	8671
1995	2707	3271	4702	10680
1996	2611	3284	6883	12778
1997	2683	3758	8599	15040

1998	2514	3657	9886	16057
1999	2849	3847	10877	17573
2000	3077	3651	10624	17352
2001	3298	3289	9937	16524
2002	3098	2899	10183	16180
2003	3652	264	11412	15328
2004	3892	2356	7881	14129

(Source: National Institute of Industrial Property website http://www.inpi.gov.br/)

The trend of invention patent is also indicated by graphical presentation as given below.



The trend for invention patent applications indicates that although the number of applications filed by the resident applicants are less as compared to foreign applicants but domestic applications are increasingly growing every Year.This indicates growing research and development activities in brazil by the local inventors.it is also noticeable feature that number of applications being filed through national phase under PCT by the foreign applicants started increasing since 1994 have suddenly now droped in 2004.Moreover, the number of applications filed by foreign applicanrs under paris convention rout is also increasing.as a over all the total number of applications for invention patents generally shows the increasing trend.The government of brazil has taken lot of initiatives to promote the research and develoment activities by the domestic Industries.For intance, in order to provide incentives to increase innovative activities, as well as to facilitate scientific and technological research by private companies, especially by Small and Medium-sized Enterprises (SMEs), the House of Representatives of the Brazilian Congress

approved an Innovation law on July 5, 2004,[178]. This law is likely to create adequate conditions to encourage a greater number of firms to invest and become involved in technological developments.

In Brazil, 70% of R&D expenses are financed with public resources and 80% of Brazilian researchers carry out their activities within public institutions (universities or research centers), concentrating on the Production of scientific papers[179]. This leads to consolidate strong scientific capabilities and generate huge number of scientific publications, which represent about 1.5% of the total scientific publication worldwide. This percentage however is similar to the rate achieved by Korea but the technological performance measured by the number of patents suggests a different story. In 1980, the number of patents granted by USPTO to Brazilian inventors was 33 and in 2000, this number increased to 113 whereas in same year Korean inventors got 30 patents which increased to 3472 in 2000, placing Korea among the most important innovators.[180] The Innovation Law would allow sharing of science and Technological Institutes laboratories with SMEs. This will certainly facilitate higher degrees of R&D among small companies resulting into generation of more intellectual property.

5.4.4 Role of utility model in the development: At present Brazil is one of the fast growing economies of the world. The gross domestic production(current prices) in 2005 was 882 US billion dollars and in terms of purchasing power parity（PPP）, it was 1,513.2 billion US dollars and expected to cross 1,804 billion US dollars making it the ninth largest economy in the world and the largest in Latin America.[181]Real growth was 5.7 as a inward Foreign Direct Investment(15,066 million US Dollars), after china and Hong Kong China）,the brazil is one of the top recipients in the developing

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[178] Maria Beatriz Amorim Páscoa, Director of Institutional Partnerships and Technological Information, INPI in a article titled as` In Search of an Innovative Environment - the new Brazilian Innovation Law` available at http://www.wipo.int/sme/en/documents/brazil_innovation.htm last visited on August,10 2007

[179] ibid

[180] ibid

[181] http://en.wikipedia.org/wiki/Economy_of_Brazil

countries[182]. The utility model protection system is existing since 1923.The system is said to have helped domestic producers gain a significant share of farm-machinery market by encouraging adaptation of foreign technologies to local conditions[183]. However, the current system has not been so attractive to the inventors and small and medium sized enterprises (SMEs) .One of the reasons is that, the law has no flexibility as in the laws of Germany and Japan. The law has substantive examination provisions for the grant of utility models as applicable to patent. This creates delays in the registration of utility model rights. Similarly, the threshold of inventive activity for patent and utility model is also same. The law also does not provide the flexibility in the conversion of the application from patent to utility model in case the application for patent fails to meet the higher standards of inventiveness. However, it is important that utility model protection system has been fully utilized by the domestic applicants as compared to foreigners as the number of applications filed by them is far more than foreigners. Since number of applications filed for utility models as well as invention patents by the domestic applicants is increasing growing, it is understood that domestic research and activities are also growing. Therefore the growing research and activities are certainly bound to play the important role in the technological development of the country.

[182] World Investment Report 2006 available at www.unctad.org/wir

[183] Keith E. Maskus, Intellectual Property Rights and Economic Development,2000,pp-479,available at www.law.case.edu/student_life/journals/jil/32-3/maskusarticle.pdf,last visited on August,27,2007

CHAPTER-VI

INDIAN SCENARIO

Presently, in India, the inventions are protected through patents under the patent law. Similarly the inventions relating to industrial designs are protected under the design law. The inventions for before being granted patents are subjected to substantive examination as to their patentability aspects such as novelty, inventive step and industrial application. Apart from this, they are also considered as to whether such inventions attract any of the provisions relating to non-patentability as stipulated in the law. Further, for any invention which is being considered for patent, the inventive activity generally relates either to improvements with regard to functionality or techniques to produce the improved products or sometimes the products and processes are entirely new but these improvements relating to functionality or techniques or newness itself must be non- obvious to the person skilled in the art. Therefore the inventive ingenuity or the degree of inventiveness plays a very important role, in addition to its newness, in acquiring the patent rights for these kinds of inventive activities. The industrial designs, on the other hand, are being considered for their registration for the inventive activity with regard to their shape, configuration, and patterns relating to ornamental or physical aesthetic appearance only. However, it does not protect any inventive activity relating to any mode or principle of construction or anything which is a mere mechanical device involving wafer thin inventive ingenuity but having a useful practical advantage. This is probably area where the utility model inventions fit in as such inventions are not protectable under patent for being lack of inventiveness. Currently the Patents Act 1970, which has been amended in 1999, 2002 and 2005, is in force whereas for registration of industrial design, the Design Act 2000 repealing the Design Act 1911 is in force. This chapter examines as to what extent the provisions under these laws protect these kind of inventive activities.

6.1 Important Provisions of the Patent Law

6.1.1 Patentability of the inventions: - The Patents Act, 1970 provides that the patents may be granted for any invention whereas such invention is either a new product or the process involving an inventive step and capable of industrial application[184].Although the Act defines the terms such as inventive steps and capable of industrial application, no definition is provided for novelty or newness. However the Patents Acts, 1970 puts onus on the examiner to make investigation by conducting search for anticipation by previous publications and prior claiming of the invention[185].Therefore according to the provisions contained therein an invention may be considered to be new (novel) if the same has not been published in any specification filed in India on or after the 1st day of January 1912 or any document in India or elsewhere in the world or the same has not been claimed in other application in India or publicly known or publicly used in the country, before filing of the patent application or priority date as the case may be [186]. However the anticipation of the invention by prior publication , by public display , by public working and use or prior communication is subject to the conditions contained in the provisions of sections 29 to 34 of the Act.[187]The Act also defines the term "inventive step" as a feature of the invention that involves technical advance as compared to the existing knowledge or having economic significance or both and that makes the invention not obvious to a person skilled in the art[188]. This definition of inventive step is a revised one which was has been amended in 2005 to include economic significance and technical advancement as compared with existing knowledge. As far industrial application is concerned, the definition is similar to that given in the European

[184] Section 2(1)(j) of the Patents act 1970.This definition of the term `invention` was redefined by the Patents （Amendments） Act, 2002 which became operational with effect from May 20,2003.
[185] Section 13
[186] However, by the recent amendment to the Patents Act 1970 in 2005, the word "new invention" has been defined to mean" any invention or technology which has not been anticipated by publication in any document or used in the country or elsewhere in the world before the date of filing of the patent application with complete specification, i.e. the subject matter has not fallen in public domain or that it does not form part of the state of art". This means that prior public knowledge or prior public use outside India would also lead to loss of novelty. This amendment; however seems to be in conflict with the provisions of section-25 of the Act.
[187] Anticipation of the invention by prior publication, by public display, by public working and use or prior communication is not considered provided the application for patent has been filed not later than12 months from the date of such publication or display and such working was for the purpose of reasonable trial only and the invention was used after filing of the provisional specification.
[188] Section 2(1)(ja)

Patent Convention, according to which the invention is capable of industrial application if it can be made or used in an industry[189].

6.1.2 Non-patentability of the inventions: — Apart from patentability conditions the law also excludes certain inventions from the patentability. It means that the subject matter of such inventions is not considered patentable under the Act[190]. These inventions are namely;

(a) any invention which is frivolous or which claims anything obviously contrary to well established natural laws ;-Perpetual motion machine

(b) any invention, the primary or intended use or commercial exploitations of which could be contrary public order or morality or which causes serious prejudice to human, animal or plant life or health or to the environment;-

(c) the mere discovery of a scientific principle or the formulation of an abstract theory for discovery of any living thing or non-living substances occurring in nature;

(d) the mere discovery of a new form of a known substance which does not result in the enhancement of the known efficacy of that substance or the mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant.

- Explanation - For the purpose of this clause, salts, esters, ethers, polymorphs, metabolites, pure form, particle size, isomers, mixtures of isomers, complexes, combinations and other derivatives of known substance shall be considered to be the same substance, unless they differ significantly in properties with regard to efficacy.

(e) any substance obtained by a mere admixture resulting only in the aggregation of the properties of the components thereof or a process for producing such substance;

(f) the mere arrangement or re-arrangement or duplication of known devices each functioning independently of one another in a known way;

(g) any method of agriculture or horticulture;

[189] Section 2(1)(ac)
[190] Section 3

(h) any process for the medicinal, surgical, curative, prophylactic diagnostic, therapeutic] or other treatment of human beings or any process for a similar treatment of animals to render them free of disease or to increase their economic value or that of their products.

(i) Plants and animals in whole or any part thereof other than micro-organisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals;

(j) any mathematical or business method or a computer programe per se or algorithms;

(k) any literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever including cinematographic works and television productions;

(l) a mere scheme or rule or method of performing mental act or method of playing game;

(m) any presentation of information;

(n) topography of integrated circuits;

(o) any invention which in effect, is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components.

(p) Invention relating to atomic energy falling within section 20(1) of the Atomic Energy Act 1962[191]

6.1.3 Other important and relevant provisions:- Under the Act **,**there are also provisions relating to publication of applications after eighteen months from the date of filing or priority date and examination of applications only on filing of request for such examination. The Act also provides provisions for pre-grant opposition procedure and post grant procedure within one year from the publication of the grant of patent in the Patent Office. The provisions relating to claiming right of priority on the basis of national application as well as international application filed through PCT or under Paris Convention. There are also provisions relating to revocation (equivalent to invalidation in other countries) by the Appellate Board and High Court and infringements and penalty in case of violation of provisions of the Act. As in case of WTO member countries, the patent rights are granted for 20 years from the date of

[191] Section 4

filing of the application or in case of international application, the right is from international filing date.

6.2 Important Provisions of the Design Law:- Currently, in India the Design Act 2000 is in force[192]. This law has replaced the Indian Design Act 1911.The important provisions relating to registerability and non registerability of an industrial design are mentioned below.

6.2.1 Registrability of the Design:—According to section 5 of the Act, The Controller may, register the design on the application of any person claiming to be the proprietor of any new or original design not previously published in any country and which is not contrary to public order or morality. A design may be registered in respect of any or all of the articles comprised in a prescribed class of articles[193].The Act also define the term `design` as only the features of shape, configuration, pattern, ornament or composition of lines or colours applied to any article whether in two dimensional or three dimensional or in both forms, by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and are judged solely by the eye; but does not include any mode or principle of construction or anything which is in substance a mere mechanical device[194]. The design also does not include any trade mark as defined in clause (v) of sub-section(1) of section 2 of the Trade and Merchandise Marks Act, 1958 or property mark as defined in section 479 of the Indian Penal Code or any artistic work as defined in clause (c) of section 2 of the Copyright Act, 1957[195].since the design is registerable only in respect of an article, the term "article" has been defined to include any article of manufacture and any substance, artificial, or partly artificial and partly natural and includes any part of an article capable of being made and sold separately[196].The Act also defines as to what constitute original design. According to the provisions of section 2(g) "original", in relation to a design, means originating from the author of such design and includes the cases which though old in themselves yet are new in their application. In order be

[192] The Design Act 2000 is in force since May 11, 2001with the Design Rules 2001
[193] Section 6(1)
[194] Section 2(d) of the Act.
[195] ibid
[196] Section 2(a)

new the design must not have been disclosed to the public anywhere in India or in any other country by publication in tangible form or by use or in any other way prior to the filing date, or where applicable, the priority date of the application for registration[197].However the disclosure of a design by the proprietor to any other person, in such circumstances as would make it contrary to good faith for that other person to use or publish the design, and the disclosure of a design in breach of good faith by any person, other than the proprietor of the design, and the acceptance of a first and confidential order for articles bearing a new or original textile design intended for registration, shall not be deemed to be a publication of the design.[198] Further if the design is exhibited in an industrial exhibition by the Government, Any publication of design due to such exhibition shall not invalidate the design for its registration provided the application is made within six months from the date of the first exhibition of such design[199].

6.2.2 Non- registerability of certain designs: — Section 4 of the Act excludes designs from their registration such as a design which is not new or original or the design which is not significantly distinguishable from known designs or combination of known designs or the design which comprises or contains scandalous or obscene matter.

6.2.3 Other important relevant Provisions:—**T**he following provisions are some of the important and relevant under the Act.

(a) Examination:—Every application is required to be filed for the registration of design in accordance with the provisions of the Act and rules made there under and has to be examined before its registration. On meeting the requirements of the law, the design shall be registered and certificate to that effect shall be issued.

(b) Publication:—According to the provisions of section 7,after registration of the design, the office shall make publication of the prescribed particulars of the design to be published in such manner as may be prescribed in official gazette and thereafter the design shall be open to public inspection.

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[197] Section 4(b)
[198] Section 16
[199] Section 22

(c) Term of Protection:—**T**he term of registered design is 10 years from the date of registration which can be further extended for another period of 5 years provided a request for such extension is made before expiry of such 10 years along with the prescribed fee[200].

(d) Cancellation:-According to the provisions of section 19(1),any person interested may present a petition for the cancellation of the registration of a design at any time after the registration of the design, to the Controller on the grounds that (a) that the design has been previously registered in India or (b) that it has been published in India or in any other country prior to the date of registration or (c) that the design is not a new or original design or (d) that the design is not registrable under this Act or (e) it is not a design as defined under clause (d) of section 2.

(e) Appeal:—According to the provisions of section 19(2),an appeal shall lie from any order of the Controller under this section within three months from the date of order to the High Court, and the Controller may at any time refer any such petition to the High Court, and the High Court shall decide any petition so referred.

(f) Right of priority:—The applicant has a right of priority from the application filed in United Kingdom or any of other convention countries or group of countries or countries which are members of inter-governmental organizations within six months from the date of first filing of the application[201]

(f) Miscellaneous Provisions:—There are other provisions in the Act relating to the registration of assignment of the rights, powers of the controllers and powers of the Central Government.

6.3 Empirical analysis of IP Applications:

(a) Patent applications: The following table indicates the number of applications for patent filed by the domestic applicants as well as by the foreign applicants from 2000-01 to 2005-06 in Indian Patent Office[202]. It can be seen that number of applications filed by the domestic applicants is, although, increasing every year, but in terms of percentage to foreign applications, it does not indicate healthy trend.

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[200] Section 11

[201] Section 44 of the Act

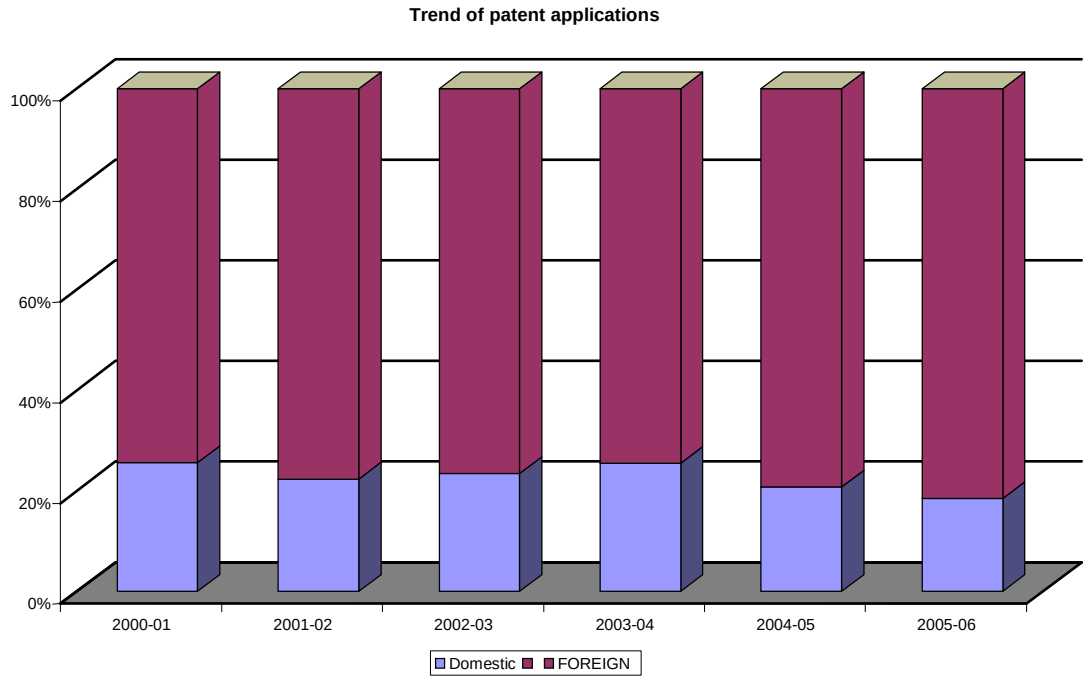
[202] The details of applications filed in 2006-07 by domestic and foreign applicants could not be obtained. However, total numbers of 28,882 applications for patent were filed.

Table: Number of patent application filed by domestic and foreign applicants

Applicants	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Domestic	**2179**	**2371**	**2693**	**3218**	**3630**	**4521**
(a)Foreign	2160	1870	1724	1678	3165	4517
(b)National Phase applications under PCT	4164	6351	7049	7717	10671	15467
Total foreign application (a+b)	**6324**	**8221**	**8773**	**9395**	**13836**	**19984**
Grand Total	8503	10592	11466	12613	17466	24505

(Source: Annual Report of office of CGPDTM 2005-06)

The trend of applications filed by the domestic applicants as against the applications filed by the foreigners is indicated in the graphical figure below. It shows that the domestic applicants file around 20-23% as compared to foreign applicants. However the percentage of filing by the domestic applicants has gone down below 20% in the fiscal year 2005-06 despite the increase in their number. This trend however does not depict a healthy situation for intellectual property creation and protection culture particularly in case of patent.



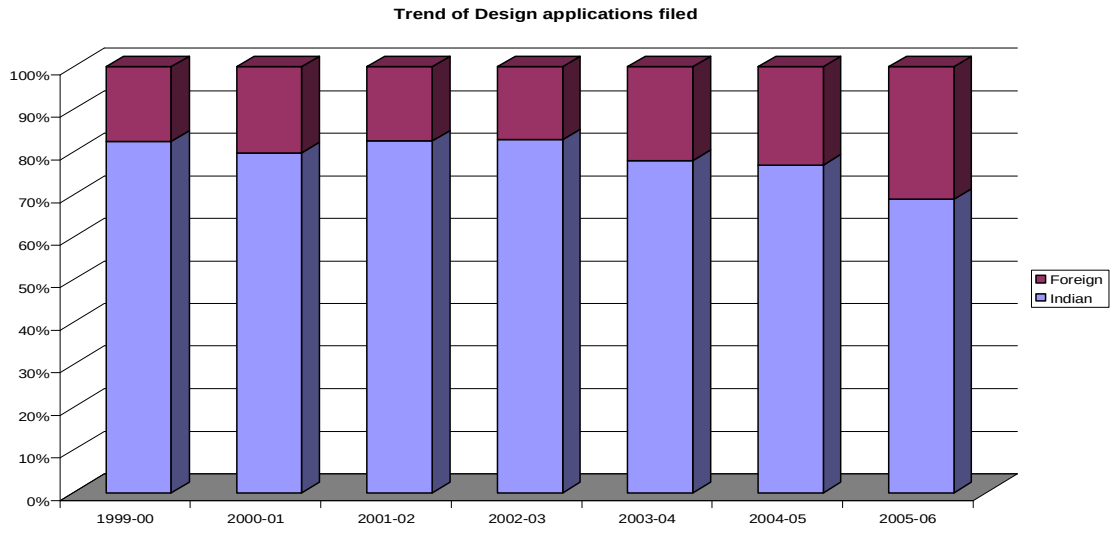
(b) Design applications: The following table indicates the number of applications for designs filed by the domestic applicants as well as by the foreign applicants from 1999-00 to 2005-06 in Indian Patent Office. It can be seen that number of applications filed by the domestic applicants is not only increasing every year, but also increasing in terms of percentage to foreign applications.

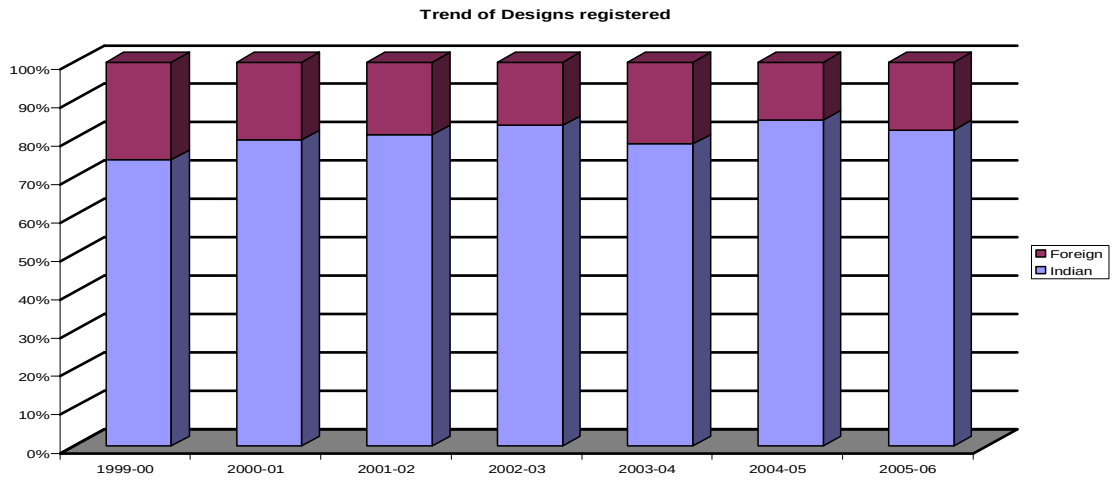
Increasing trend in the design applications also indicate that Indian innovators appear to be more interested in the IP protection relating to aesthetic creations of the products rather than the functional improvements. As the registration for design is faster than the patent, the innovators therefore appear to be more inclined towards design registration.

Table: Number of design applications filed by domestic and foreign applicants

Year	Applications filed		Applications registered	
	Indian	Foreign	Indian	Foreign
1999-00	2352	499	1031	351
2000-01	2558	649	1930	490
2001-02	2766	584	1969	457
2002-03	2589	535	1974	390
2003-04	2619	738	2004	543
2004-05	3093	924	3166	562
2005-06	3407	1542	3439	736

Source: Annual Report of office of CGPDTM 2005-06)





It can be observed from the above graphical figures showing the trend of design applications filed and registered that in case of design registration, the increase is not only in the number of applications being filed by the domestic applicants but also in the number of the designs being registered to them. This trend also indicates that the domestic applicants appear to be somewhat reluctant towards the patent system as compared to the design registration system. However keeping in view the capabilities of Indian scientific manpower and their strength, the numbers of applications filed for patent as well as for design are no where to the number of applications filed by the domestic applicants, for instance, in China, South Korea or even Taiwan China. This is a matter of great concern for Indian industry as a whole for the purpose of competition as well as economical and technological development of the country.

6.4 Is existing IP system sufficient? :—As observed from the number of applications filed by Indian domestic applicants for patents and designs, the situation is not very happy and encouraging. Such a low filing rate of applications by domestic applicants also does reflect the true research and development activities in India. As stated in chapter-I, there are lot of research and development activities being carried out by hundreds of the national laboratories, institutes and universities. There are thousands of technical institutes and colleges apart from industrial sector including SMEs engaged in research and development activities. This can be observed by the number of research paper being published every year by the researchers[203].Although

[203] The number of research papers published by the Indian researchers are given in Chapter—I

there are several reasons for low intellectual property protection activities, one of them is that the existing law is not sufficiently able to protect their innovation activities. This fact is also reflected by the answers received from the various attorneys practicing in India in response to questionnaire sent by this author by e-mail to them[204].The domestic innovators particularly those who are engaged in such innovative activities which result into practical usefulness in the existing products seems to be reluctant to file application for protecting these kind of activities due to the fact that such innovations have very thin inventiveness which is not able to meet strong requirement of inventive step under the Patents Act. Further the provisions contained in section 3 of the Act excluding certain kinds of inventions from patentability also do not help them either. Moreover these innovators like to commercialize them quickly as the commercial life of such innovation is also very short due to tough completion not only within the country but also from abroad. Further the patenting system takes not only long time as compared to the commercial life of the innovation but also expensive. Although under the design law the protection is available within six to twelve months but the law provides protection only to the features of shape, configuration, pattern or ornament relating to aesthetic appearance of the products. This however does not protect the features or activities relating to any mode or principle of construction or anything which is in substance a mere mechanical device. Therefore such inventions or innovative activities relating to mode or principles of construction of mechanical devices which are otherwise excluded from the preview of registration under design law and either excluded under the provisions of section 3 or unable to meet the inventiveness criteria under of the Patents Act 1970 need to be protected in order to promote and encourage the intellectual property creation as well as protection culture among the domestic inventors and small innovators including SMEs which are playing very crucial role in the economical as well as technological development of the country. In view of the above analysis it can be stated that existing provisions either under the patent law or under the design law are not sufficient enough to protect and promote such kind of business oriented small innovative activities.

[204] The analysis of the answers to the questionnaire is given on page-------

CHAPTER-VII

RESEARCH METHODOLOGY-AN ANALYSIS

This research study has been conducted by using following methodology focusing various issues relating to utility model protection system.

7.1Study and Review of the documents:-In Chapter－II of this research thesis, various documents such as books, articles, journals and other documents, have been reviewed to analyze the economical and technological development of Japan. In other chapters provisions of utility model laws and implementing regulations of some developed Countries like Japan, Germany and Australia and also the proposal of the European commission have been reviewed. Apart from developed countries, the provisions of utility model laws and implementing regulations of some developing countries like China, Brazil, south Korea, and China Taiwan have been studied and reviewed. In addition to these, some annual reports, statistical data, relating to patents utility models and industrial designs have also been reviewed.

7.2 Visits and personal interviews to various organizations:-

To understand the system well in terms of its implementation, usefulness, practical aspects and implications of the system, the visits were made to Japan Intellectual Property Association（JIPA）and M/S Asamura Patent Office an Intellectual Property Attorney's Office to conduct personal interviews.

7.2.1. Visit to Japan Intellectual Property Association[205]（JIPA）:－Japan Intellectual Property Association is one of the oldest or probably the largest IPR industry organization in the world. The office of Japan Intellectual Property Association was visited for interview in order to have their opinion on this matter as JIPA is contributing a lot in development of intellectual property law and regulations in Japan advising not only the Japanese government but also Japan Patent Office. JIPA is also playing an active role in the international development taking place in this area. The JIPA was established

[205] The meeting for the interview with senior representative of JIPA was held on August 15,2007

in1938 with the membership of 10 electrical companies but now about 1000 private companies are members. Although the membership is limited to companies but there are some law firms, venture companies and university professors, which are special members but they have no voting rights. JIPA`s one of the main objectives is to help Japanese industries for sound development by utilizing the intellectual property system for technological progress. However they are offering their opinion to the government regarding intellectual property related issues. Apart from this they are also imparting training to the IP managers of the member companies. During the meeting following issues were raised.

(a) Main reason for decrease in the application:- It was stated that one of the main reasons is the non examination of application due to which there is a lack of legal authority to execute the rights. Shorter term of right is another reason. Since Japanese technology is so advanced, now the companies are interested in patent rather than utility models.

(b) What kind of changes would JIPA propose to make it popular:-Apart from the introduction of substantive examination, he was of the view that depending upon the kind of technology, value of the product and commercial life, not only for utility models but also for patent, the term of protection should be provided. Sometimes 20 years term is too much due to short development time of technology.

(c) What kind of industries are using the System:—The representative of JIPA was of the opinion that utility model and trademarks should be integrated by having a common concept of marketing to establish proper strategy. The industries which are using the system are mostly related to manufacturing toys, electrical instruments, washing machines, household goods, building structures etc but now days fashion industry is also utilizing the system.

(d) Should the system be abolished? :—The utility model represent the value of the product, therefore to maintain global competition, utility model is essential. He was of the view that except for the non examination, the utility model system is working very fine but there is a need to promote it further. As far as novelty is concerned, different segment of companies have different opinion. For instance, electrical companies do not want, rather oppose the strict requirement of novelty and inventiveness even for patent, whereas

chemical, steel, pharmaceutical companies still want and support the strict requirement of novelty and inventive step as followed now by JPO.

(e) Do you think that utility model system is good for developing countries: — According to his opinion, the system is good for developing countries and countries having lower economy. In fact this was the case of Japan some fifty years ago. During that time Japan utilized the Utility Model System for economic growth as well as for technological development.

7.2.2. Visit to Asamura Patent Office[206]: — This attorney firm probably is one of the oldest patent attorney firms in Japan which was established in 1891. At present, there are 49 patent attorneys and 40 other technical experts working in the firm. The interview in the form of discussion with very senior level representatives of the firm was held in their office. A summary of the interview is given below.

(a) Whether utility model protection system has played an important role in the economic and technological development of Japan in the past?

The representative of the firm replied affirmatively and stated that system has played very important role in the technological development of Japan. He stated that in 1965, the number of applications filed for utility models were somewhere about 120,000 whereas for patent it was about 80,000 and Japanese economy was growing at the rate of 7%.

(b) According to the recent trend, the filing rate of utility model applications has come down heavily. What are the main reasons for?.

The representative of the firm explained that he himself was an examiner in the Japan Patent Office and also one of the members of JPO policy team dealing with utility model law. As number of applications for utility models was growing rapidly as compared to patent, there were proposals to abolish the law as Japan Patent Office was not in position to deal with the backlog on one hand and on other hand it was not sure as to whether the utility model system is continuing to contribute to the development of Japanese technologies. Accordingly the utility model law was amended several times particularly, abolition of examination system, reduction of term of protection from 15 years to 6 years, issue of technical appraisal certificate in case of any suit filed for damage in respect of infringement. Due to these changes the exercise of

[206] The Asamura Patent Office was visited on August 21, 2007 for conducting interview.

utility model rights became restrictive and made the system unpopular. These are the main reasons for the down fall in the filing rate of utility model applications. He also stated that JPO has capacity to examine only 2000 application whereas numbers of applications filed are more.

(c) Whether utility model should be abolished?

The representative of the firm explained that chemical companies are not in favour of the system as it is not attractive to them due to the fact that utility models are not granted to chemical substances and processes but the electrical, electronic and other companies are still in favour of its continuance. However he was of the opinion that now the utility model rights are not very attractive due to its short term of 10 years and legally uncertainty of the rights. He mentioned that the initial objectives of the utility model system have been successfully achieved in order to promote petty inventions. Now the Japanese technology has become advanced. Although SMEs would like to utilize the system but not many SMEs are obtaining the utility models. Further due to backlog, speed of examination is also very slow. Therefore according to him, now this system should be abolished.

（d）Whether utility model is good for developing countries?

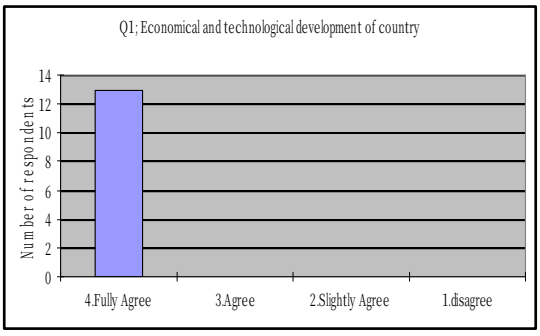
He mentioned that although the system is good for developing countries but not good for India as lot of technological advancements are taking place in India.

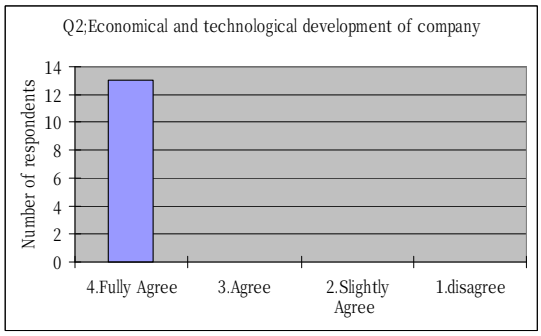
7.3 Dispatching questionnaires,-In addition to the visits and personal interviews, different kinds of questionnaires were prepared and dispatched to the officials of Japan Patent Office, intellectual property firms and companies/industries in Japan. However a separate questionnaire was also prepared and dispatched by e-mail to intellectual property attorneys in India to have their opinion about suitability of the utility model protection system in India and also share their experience regarding this law as they have experience in dealing with IP applications in this field. The analysis of the outcome of these questionnaires on the basis of the responses received is given below.

7.3.1 Analysis of responses from IP Firms -The questionnaires were sent to 34 IP Firms practicing in this field. Out of these, 13 firms responded the questionnaire. The responses of these firms have been analysed. The details

of the analysis are given below. It may be noted that the respondents herein are Intellectual Property Attorneys Firms and not as individual persons.

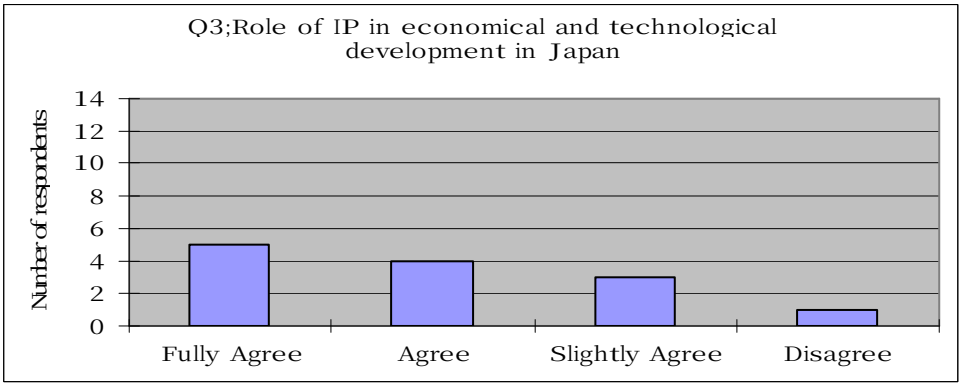
(a) Protection of IP for economic and technical development:-In response to the question as to whether the protection of intellectual property is very important for the economical and technological development of country, all respondents fully agreed that intellectual property protection is very important for economical and technological development of a country. The opinion of the respondent is indicated in the graphical figure below.



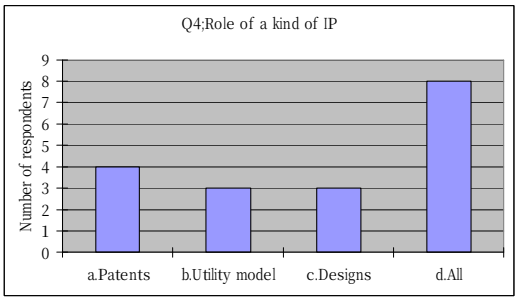


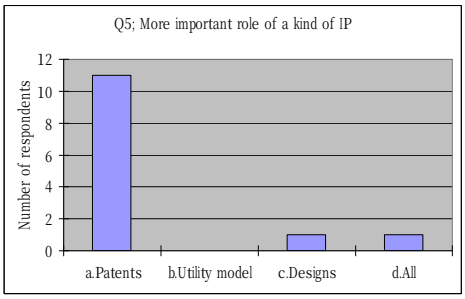
(b) Importance of IP for economic and technical development of company:-, In response to question whether the protection of intellectual property is very important for the economical and technological development of a company, all respondents fully agreed with the statement given in the questionnaire as indicated in the graphical figure above.

(c) Role of IP in economic and technical development of Japan:- With regard to the question as to whether the intellectual property has played very important role in the economical and technological development of Japan, out 13 attorney fims,5 agreed fully,4 agreed ,3 slightly agreed and only one disagreed. In terms of percentage, 38% fully agreed that IP has played very important role, 31% agreed, 23% slightly agreed and only 8% disagreed.

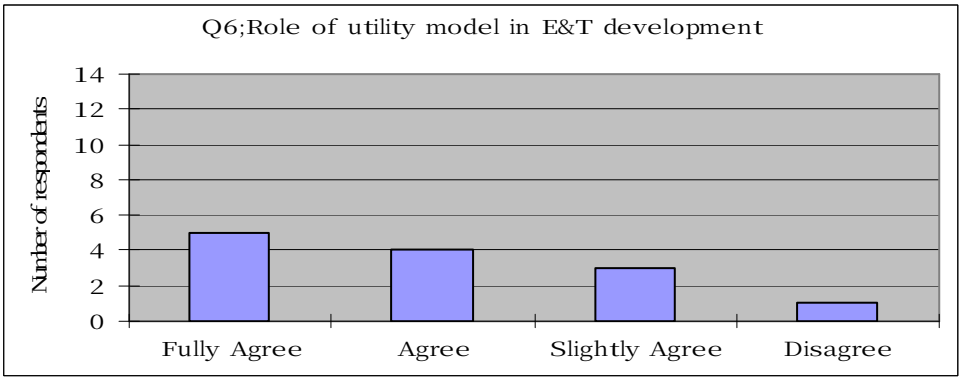


(d) Kind of intellectual Property: — Regarding the question as to which one out of patent, utility model or utility model has played important role in the economic and technological development of Japan,(8)44% opined that all have played important role whereas (4) 22% opined for patent, (3)17% each for utility models and industrial design. However about more important role,11 respondents (84%) opined for patent. The opinion in terms of the respondents is indicated below.



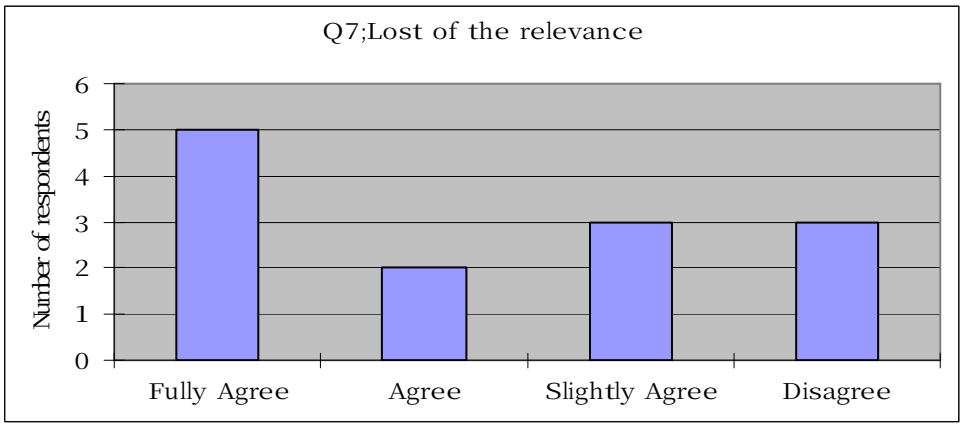


(e) Role of utility model in economic and technical development of Japan in the past:—About 38%(5) respondents fully agreed, 31%(4) agreed, only 23% (3)slightly agreed that utility model has played very important role in the past for economic and technological development of Japan. Only (1) 8% disagreed with the statement. The opinion in terms of the respondents is indicated below.

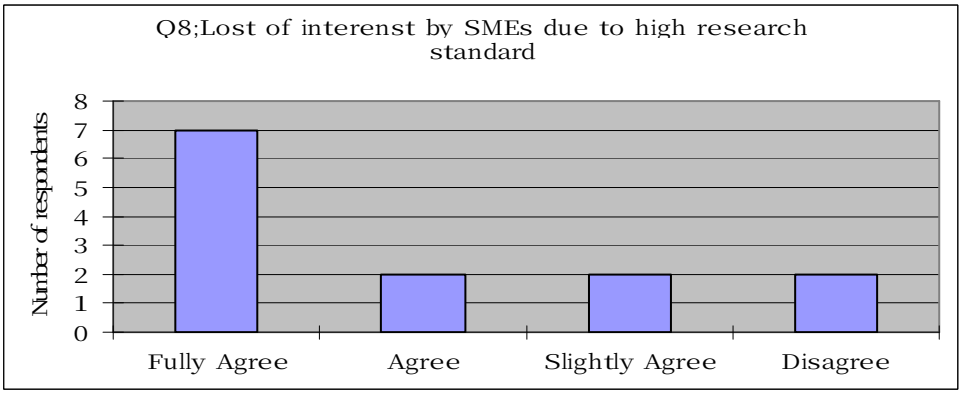


(f) Relevance of utility model in Japan:- On the question of whether the utility model protection has now lost its relevance in Japan,39%(5) respondents fully agreed that it has now lost the relevance in Japan,15% (2)agreed,23% (3)slightly agreed and only 23%(3) disagreed. **However one of the attorney firms opined that utility model protection has still its relevance in the limited particular field. It was also mentioned by them that the utilization of utility model law is also expected to decrease the**

burden of examination related to patent application. The opinion in terms of the respondents is indicated below.

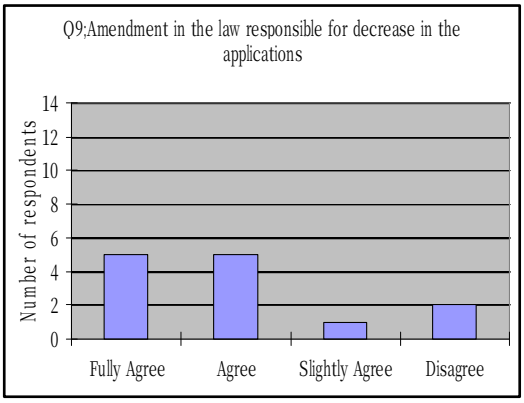


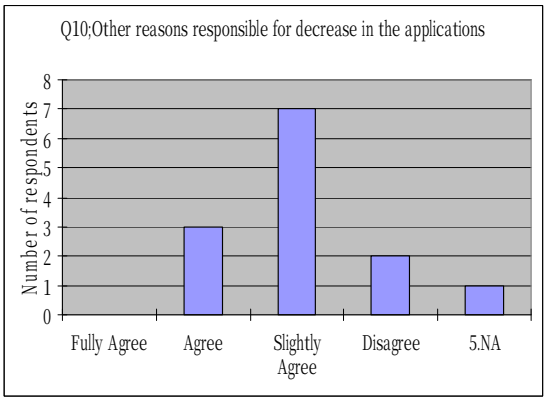
(g) Loss of interest by corporates or SMEs due to high research standards:— Regarding the issue whether Japanese Corporations or SMEs have lost interest in Utility Model system mainly because their research standard or research level has gone up and instead they are interested in patents,55%(7) respondents fully agreed,15% (2)each agreed, slightly agreed and only 15% (2)disagreed. The opinion in terms of the respondents is indicated below.



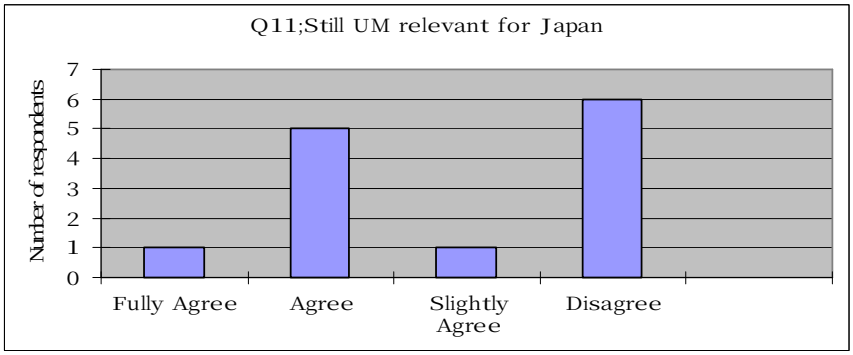
（h）**Reasons responsible for decrease in UM applications:-**Since 1993, there has been a sharp decrease in the filing rate of utility model applications .According to the response 39%(5)respondents fully agreed that amendments in the law relating to adoption of non-examination and reduction of the term of protection are mainly responsible for such decrease and 38%(5)respondents only agreed to this fact. However only 8%(1) slightly agree and 15%(2)respondents disagree to it. As far as reasons other than amendments are concerned 54% (7) respondents slightly agreed, 23%(3)respondents agreed and only 15%(2)respondents disagree. It means

that amendments in the law are main reasons responsible for such decrease. The opinion in terms of the respondents is indicated below.

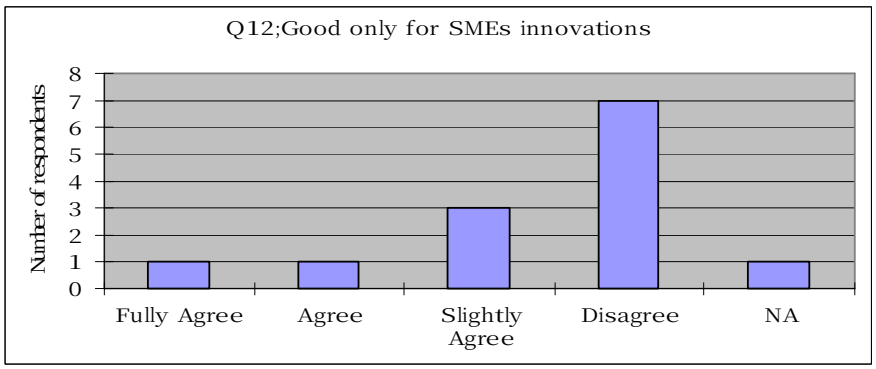




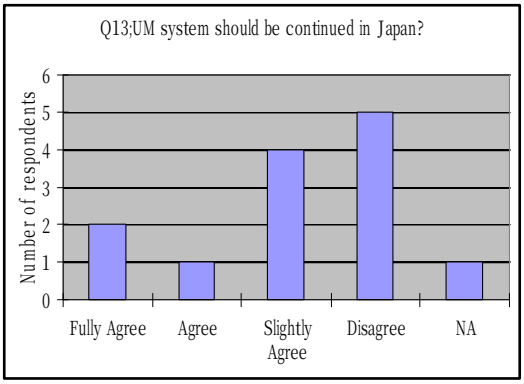
(i) Relevancy of UM in Japan:-On the matter whether the utility model protection still has relevance in Japan for the economic and technological development, 46 %(6) respondents disagreed meaning that it has no relevance in Japan now. However 38 %(5) respondent only agreed that it is still relevant but only 8 %(1) fully agreed to its relevance. The opinion in terms of the respondents is indicated below.

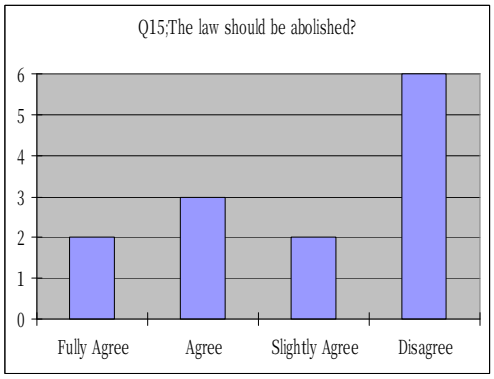


(j) Good only for SMEs innovative activities:-On the issue that the utility model protection is good only for the innovation activities done by Small and Medium Sized industries, 53%(7) respondents disagreed and only23%(3)respondents slightly agreed. The opinion in terms of the respondents is indicated below.

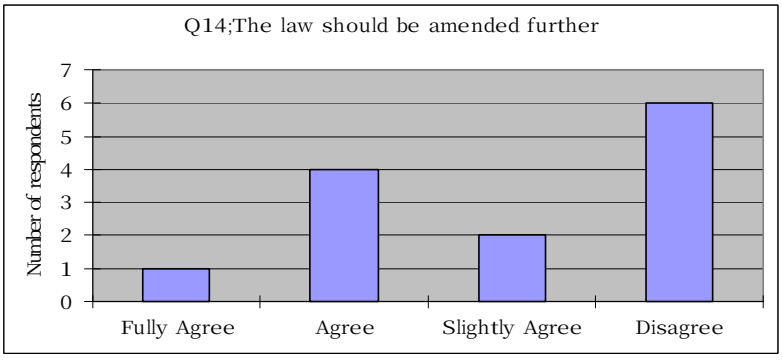


(k) Further continuance of the UM system:- On the matter of further continuance of the utility model protection system in Japan for the promotion of innovative activities,38%(5) respondents disagreed and only 31%(4) slightly agreed for continuance. However only15 %(2) respondents were fully agreed to continue the system in Japan. Interestingly, on the contrary, 47%(8) respondents disagreed with the fact that the utility model protection should be **abolished** in Japan as this has already served the purpose of economic and technological development and also it has no validity like patent and industrial designs. However 23%(3)respondents agree and 15%(2) respondents each fully agree and slightly agree to abolish the law. **However one of the attorney firms opined that from the viewpoint of the cost of patenting the invention, it is thought that patent application would be converted to utility model application.** The opinion in terms of the respondents is indicated below.

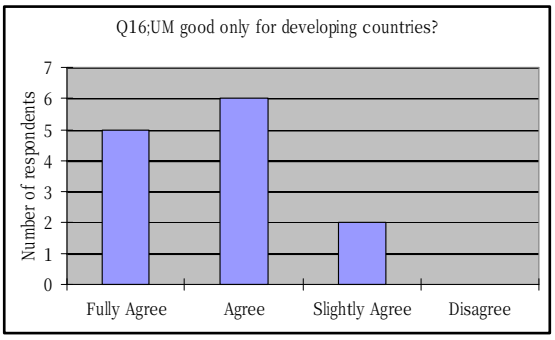


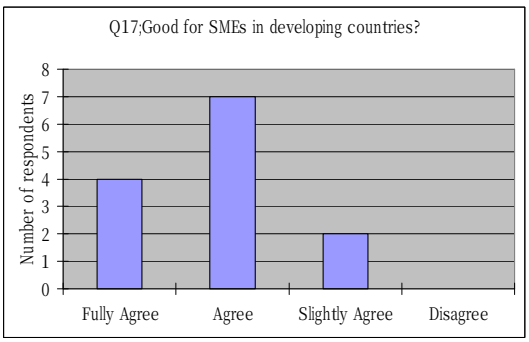


(l) Further amendments in the law:- On the issue of further amendment in the utility model Law to promote the promotion of innovative activities in Japan,46%(6)respondents disagreed meaning thereby that they are not interested in any further amendment. Only 31%(4)respondents agree and 15%(2) respondents slightly agree for amendments. The opinion in terms of the respondents is indicated below.

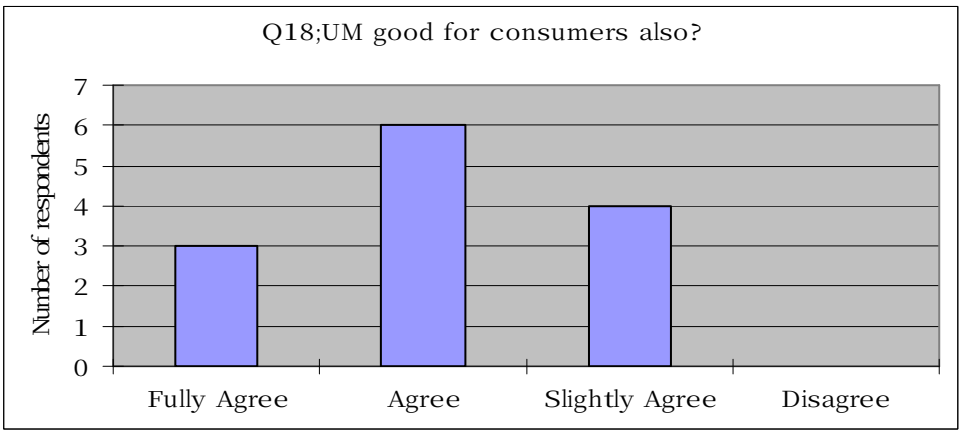


(m) Good for developing countries and SMEs in developing countries:- On the issue of whether Utility model protection system would be good for developing countries to promote economical and technological development and also for SMEs in developing countries to promote their innovative activities and strengthening their technological capabilities, most of the respondents agreed. In fact all respondents (38%(5)fully agreed,47% (6)agreed and 15%(2) slightly) agreed in case of developing countries and similarly all the respondents(31%(4) fully agreed,54%(7)agreed,15%(2) slightly) agreed in case of SMEs in developing countries. Interestingly no one disagreed to this fact. The opinion in terms of the respondents is indicated below.





(n)UM good for consumers:—On the issue of whether the utility model protection system would be good not only for SMEs in developing countries to promote and strengthening their technological capabilities but also for the general consumers as a whole,23%(3) respondents fully agreed,46%(6) respondents agreed and 31%(4) respondents slightly agreed. However no one disagreed. The opinion in terms of the respondents is indicated below.

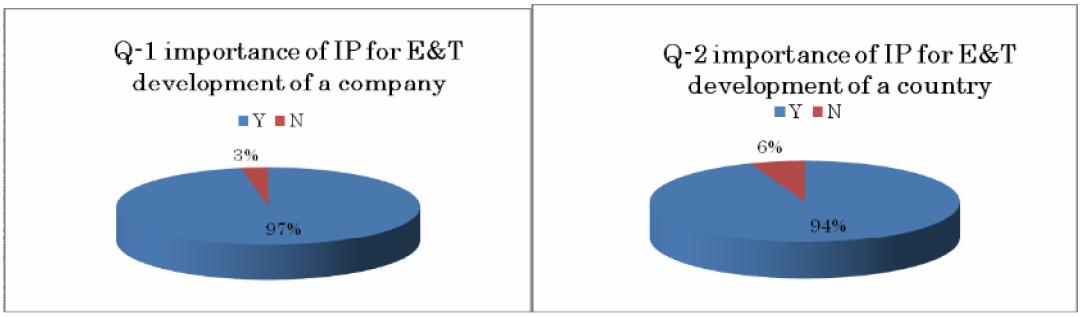


From the viewpoint of usefulness of utility model protection to developing countries, particularly the small and medium sized enterprises, one of the

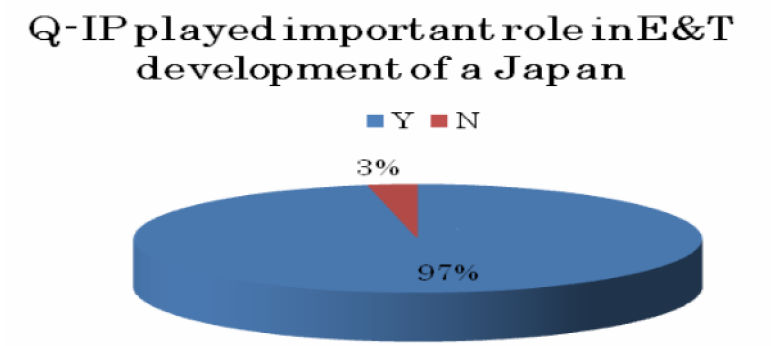
attorney firms made very pertinent comment while answering the questionnaire **that if one looks back the past 100 years of the history of Japan, one can say that the utility model system was useful but for the future, one should consider the difference between the past and current situation of technology and economy.**

7.3.2 Analysis of responses from Companies:- The questionnaires were sent to 65 companies of all sized including big corporations having the capital of 500 billion yen, medium sized companies having the capital of 100 billion yen and companies having the capital of less than 100 billion yen. Out of these, 35 companies responded the questionnaire. The responses of these companies to each question have been analyzed. The details of the analysis are given below.

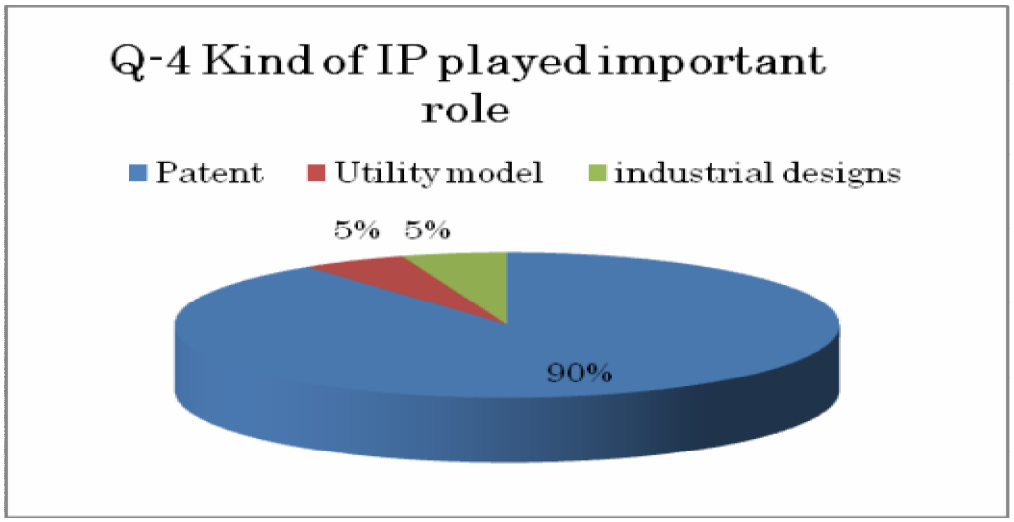
(a) importance of Intellectual property :- In response to the question as to whether the protection of intellectual property is very important for the economical and technological development of company as well as the country 97% responded affirmatively in case of company and 94% responded affirmatively in case of a country.



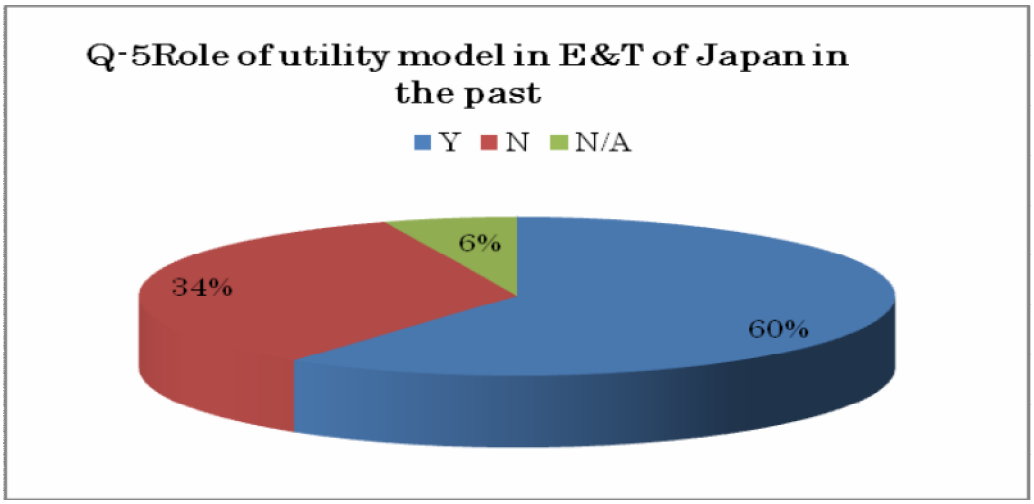
(b) Role of IP in economic and technical development of Japan:- In response to the question as to whether intellectual property has played a very important role in the economic and technological development of Japan 97% companies responded affirmatively while only 3% did not think so.



(c) Kind of intellectual Property: —Regarding the question as to which one among, patent, utility models or industrial designs has played more important role in the economic and technological development of Japan,90% feel that patent has played more important role than utility models and industrial designs. However 5% each responded in favour of utility models and industrial designs

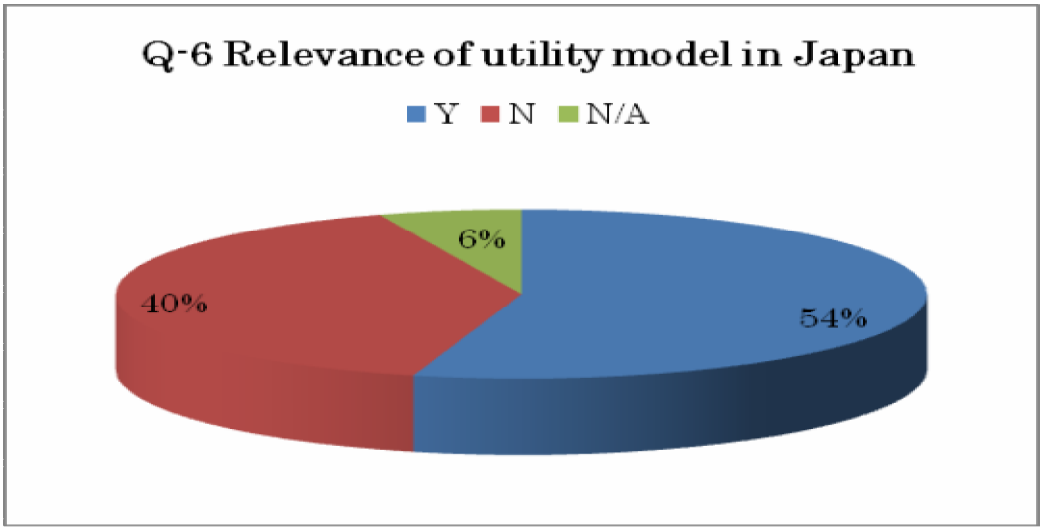


(d) Role of utility model in the economic and technological development of Japan in the past:—Regarding the issue whether apart from patents and industrial designs, utility model protection has also played in past a very important role in the economic and technological development of Japan,60% companies responded affirmatively while 34% did not think so and 6% did not answer this issue.

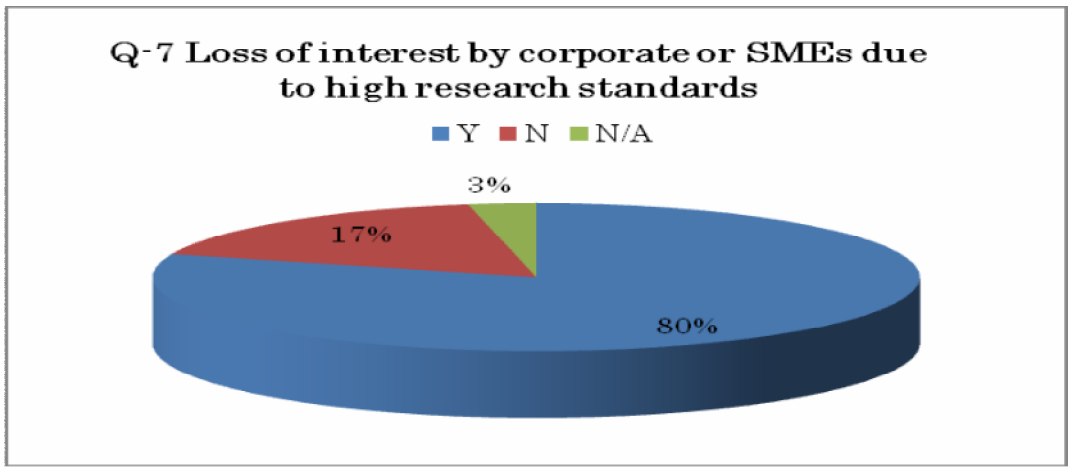


(e) Relevance of utility model in Japan:- On the question as to whether the utility model protection has now lost its relevance in Japan,54%

companies responded affirmatively while 40% of the companies still do not think so and 6% did not answer this question at all.

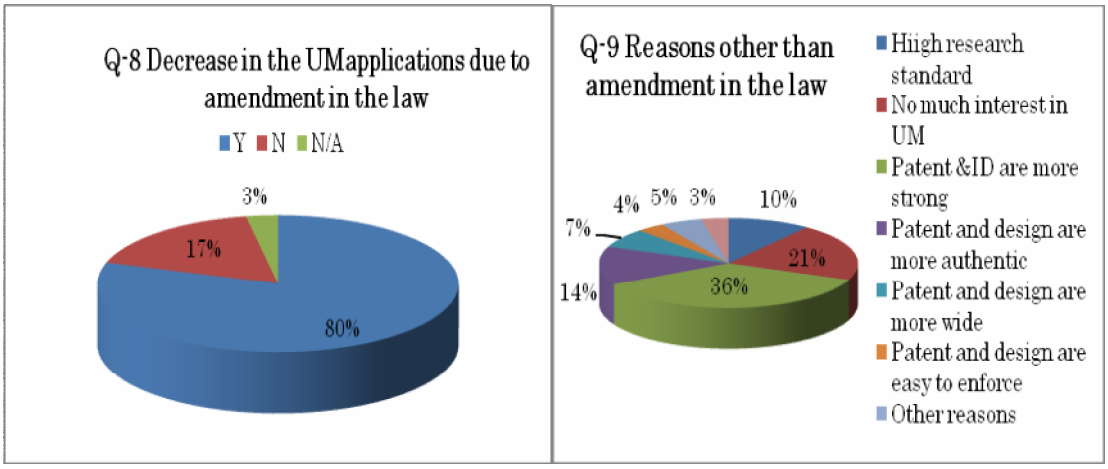


(f) Loss of interest by corporate or SMEs due to high research standards:— Regarding the issue whether Japanese Corporations or SMEs have lost interest in Utility Model system mainly because their research standard or research level has gone up and instead they are interested in patents,80% companies responded affirmatively and only 17% of the companies responded negatively while 3% did not answer the question.

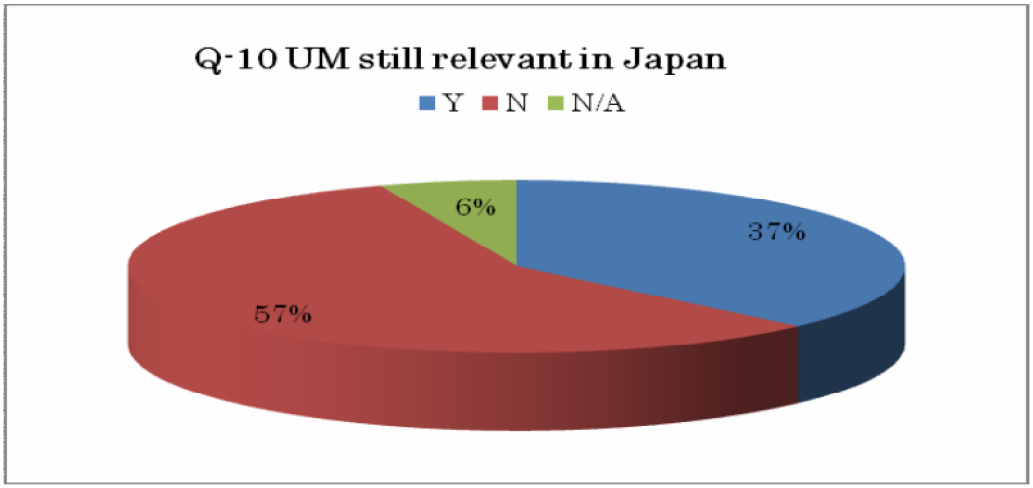


（h）Reasons responsible for decrease in UM applications:-Since 1993, there has been a sharp decrease in the filing rate of utility model applications .According to the response,80% of the companies responded that the decrease in the number of application of utility model is due to the amendment in the law, while 17% did not think so and 3% did not wish to answer the question. When asked about the other reasons for such decrease, 36% of the companies responded that patent and industrial designs are more

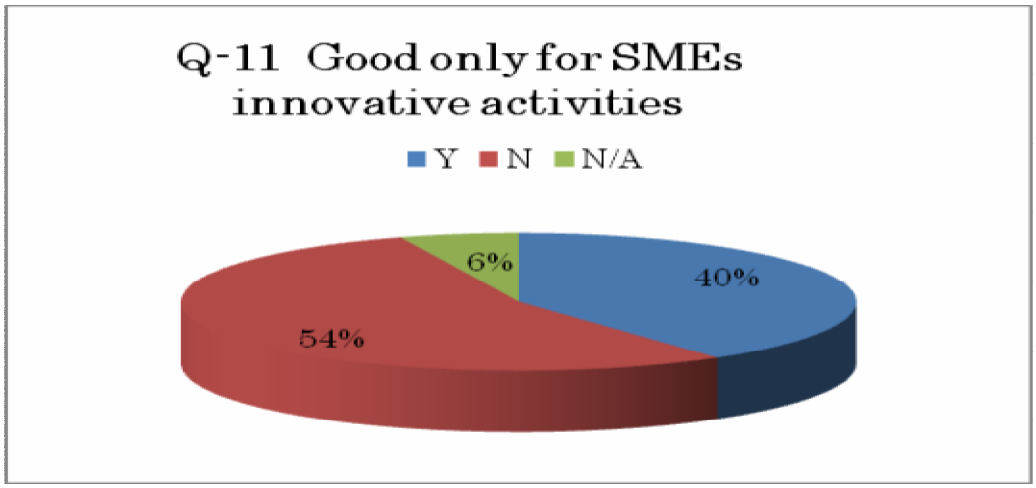
stronger right than utility model and 21% responded that there is no much interest in Utility models.However,14% of the companies responded that patent and design rights are more authentic than utility model law and 10% of the companies felt that research standard of Japanese companies have gone up so they are interested in patent rather than utility models. Some companies also felt that patent and design are more wide and easy to enforce in addition to other reasons. I**n addition to above, one of the companies was of the opinion that area covered by the utility model is limited only to the shape, therefore this is also one of the reasons for decrease in the filing of UM applications**



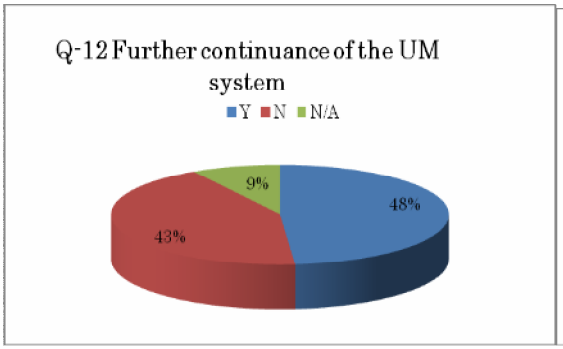
(i) Relevancy of UM in Japan:-On the matter whether the utility model protection still has relevance in Japan for the economic and technological development,57% of the companies felt that it has no relevancy now and 37% companies still feel that it still has the relevancy while 6% did not wish to answer the question.

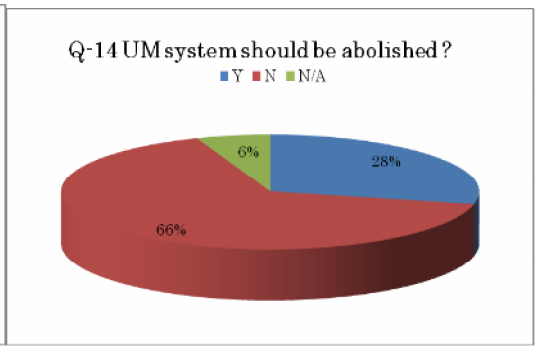


(j) Good only for SMEs innovative activities:-On the issue of whether the utility model protection is good only for the innovation activities done by Small and Medium Sized industries, 54% companies responded negatively. However 40% of the companies still feel that utility model system is still good for protecting the innovative activities of Small and Medium Sized industries, while 6% did not answer the question.

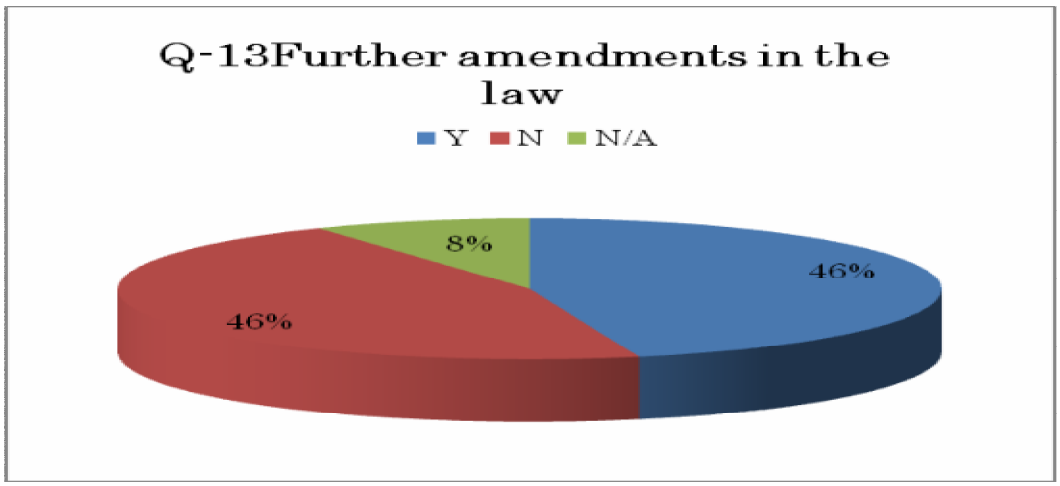


(k) Further continuance or abolition of the UM system:- On the matter of further continuance of the utility model protection system in Japan for the promotion of innovative activities,48% of the companies are still in favour of its continuance while 43% are not in favour of continuance and 9% did not answer the question. When the question was asked differently as to whether utility model protection should be **abolished** in Japan as this has already served the purpose of economic and technological development and also it has no validity like patent and designs,66% companies responded negatively and only 28% favoured the abolition while 6% did not respond the question.

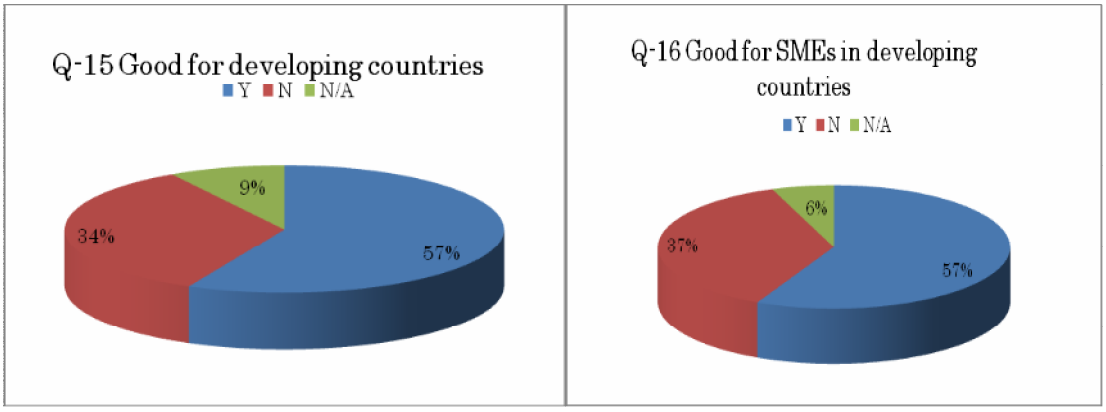




(l) Further amendments in the law:- On the issue of further amendment in the utility model Law to promote the promotion of innovative activities in Japan,46% of the companies are in favour and same number of companies are not in favour of any amendment while 8% did not answer the question.

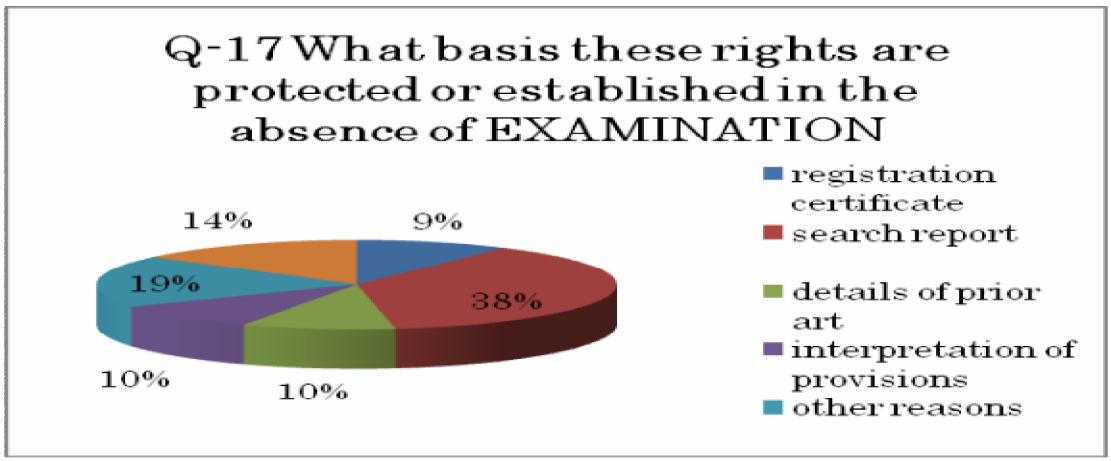


(m) Good for developing countries and SMEs in developing countries:- On the issue of whether Utility Model protection system is good for developing countries to promote economical and technological development and also for SMEs in developing countries to promote their innovative activities and strengthening their technological capabilities,57% companies felt that utility model system is good for developing countries in order to promote economical and technological development and 34% of the companies responded in negative, while 9% did not answer. Similarly 57% companies felt that it is good for SMEs in developing countries to promote their innovative activities and strengthening their technological capabilities and 37% did not think so while 6% did not respond the question.



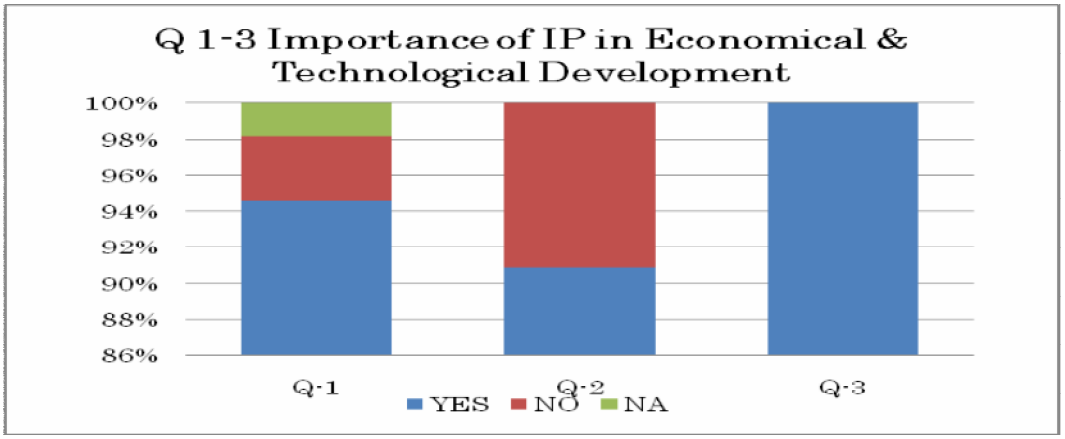
(n) Basis of the protection or establishment of legal rights:-On the question as to what basis these rights are protected or established by the companies in case of infringement since there is no examination for utility model applications, 38% companies favoured the search report as a registerability report or technical evaluation report on the request of the company issued by Japan Parent Office.However 19% responded for other

reasons,while 14% did not answer and 10% each fovoured prior art search and legal interpretation of statutory provisions and 9% favoured registeration certificate issued by Japan Patent Office.*One of the companies commented that there is no execution of right in utility model system.*



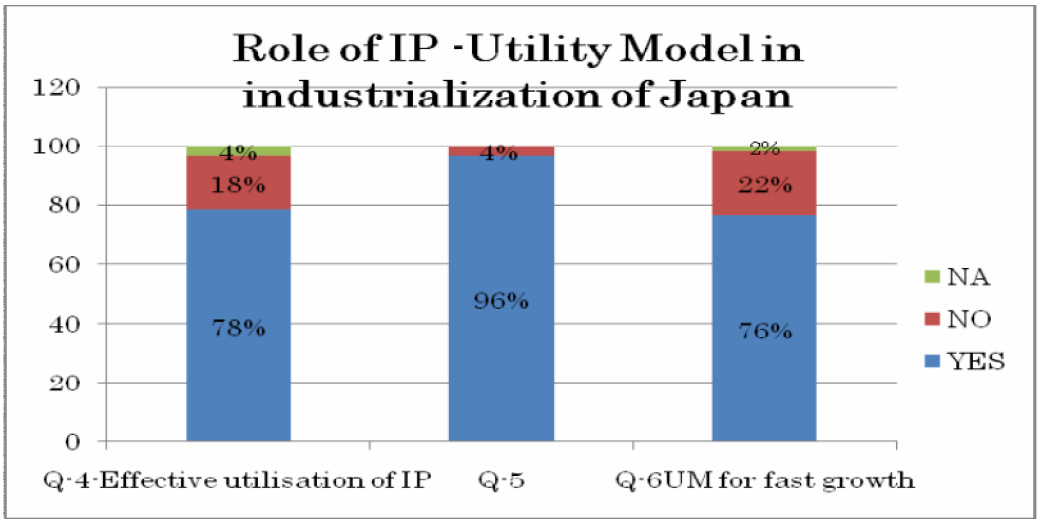
7.3.3 Analysis of responses from Japan Patent Office:—In order to have the opinion of Japan Patent Office, the questionnaires were sent to the officials of Japan Patent Office.55 officials from various department responded to the questionnaire. The analysis of their answers is given below.

(a) Importance of Intellectual property:-In response to the questions as to whether the protection of intellectual property is very important for the economic and technological development of the country or a company,94% responded affirmatively in case of a country(Q-1), and almost all(100%) agreed in case of a company(Q-3).However, to the question, whether intellectual property has played a very important role in the economic and technological development of Japan(Q-2),91% responded affirmatively and only 9% did not think so.

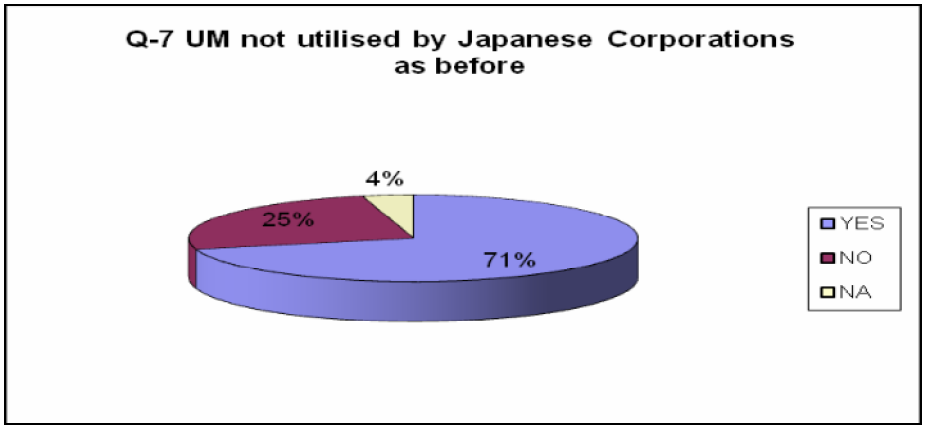


(b) Industrialisation due to effective use of IP:— To the question as to whether industrialization in Japan was mainly due to creation and effective utilization of intellectual property by Japanese companies, 78% answered affirmatively, while 18% did not agree to this and 4% did not answer the question.

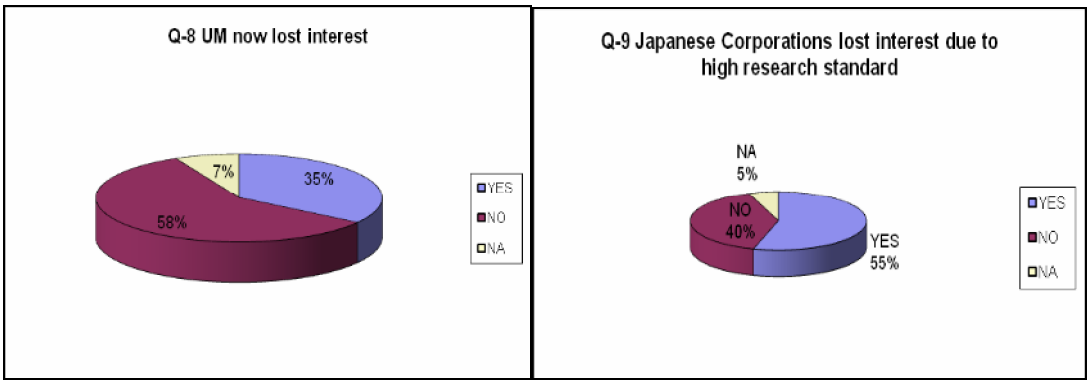
(c) Role of utility model in industrialization:-However in response to the question as to whether apart from patent, utility model protection was also responsible for industrialization in Japan, 96% of the respondents agreed and only 4% did not agree. Similarly 76% agreed that utility model system was also responsible for fast growing industrialization of Japan in the past but 22% still did not think so.



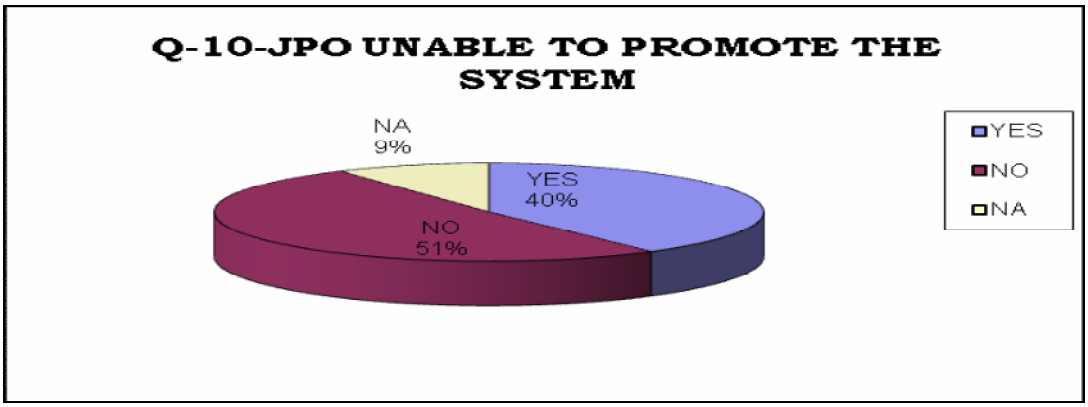
（d）UM system not much utilised.:—Regarding the question whether this law is not much utilized by the Japanese companies including Small and Medium sized Enterprises(SMEs) as utilized before1993,71% agreed that it is not utilized much as used before. However 25% are not of the same opinion and 4%preferred not to answer the question.



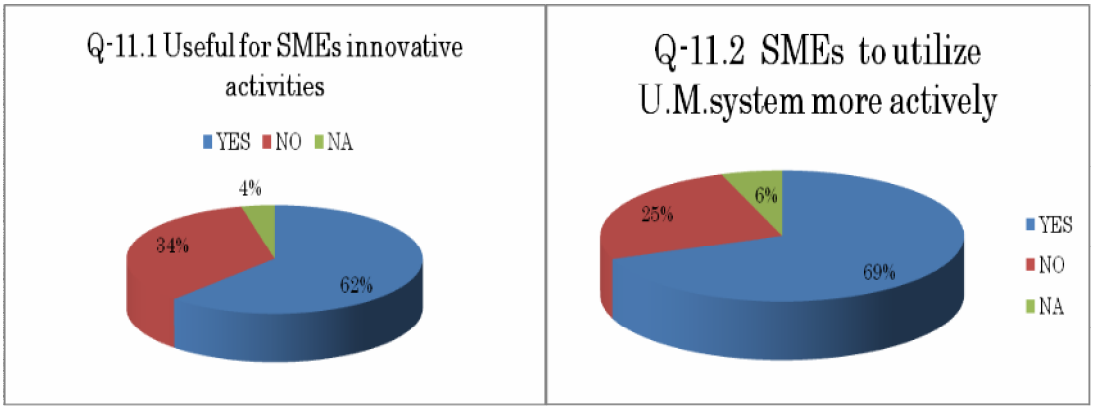
(e) Relevance of utility model in Japan:- On the question whether utility model protection has now lost its relevance in Japan,58% agreed that now utility model protection system has lost the interest in Japan but 35% still felt its importance and relevance. Similarly on the issue of whether Japanese Corporations or SMEs have lost interest in Utility Model system mainly because their research standard or research level has gone up and instead they are interested in patents, 55%agreed and 40% disagreed and 5% preferred not to answer the question.



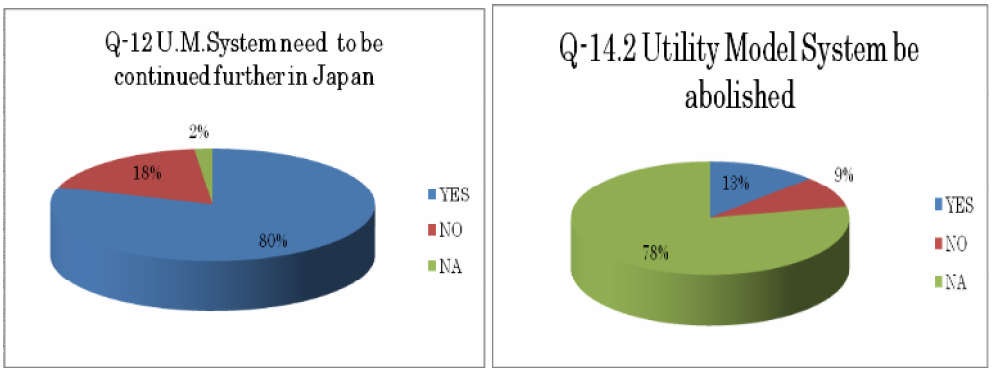
(f) Japan Patent Office not able to promote the System:— On the issue of whether JPO, is unable to promote this system due to its own difficulties or problems particularly backlog of applications,51% did not agree but surprisingly 40% respondent feel that JPO is not able to promote the system. However 9% did not respond to the issue.



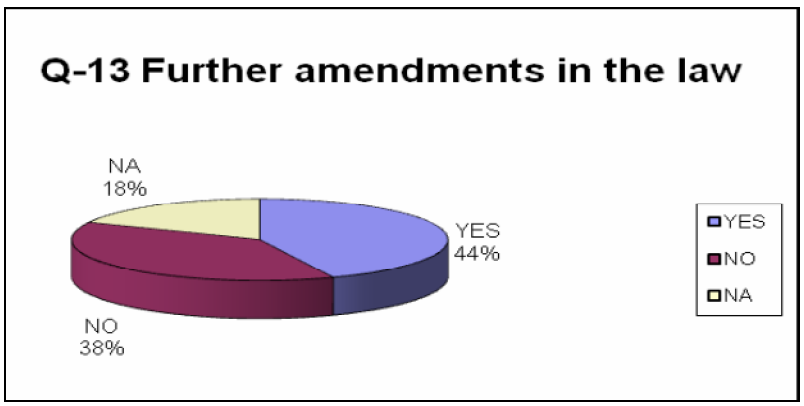
(g) Useful for SMEs innovative activities:-On the issue of whether the utility model protection is useful for the innovation activities by Small and Medium Sized industries,62% respondents agreed and 34%did not agree with this kind of thinking,4% respondents did not respond to the question. Similarly on the issue of whether SMEs have to utilize utility model system more actively, 69% agreed and 25% did not think so, while 6%did not answer the question.



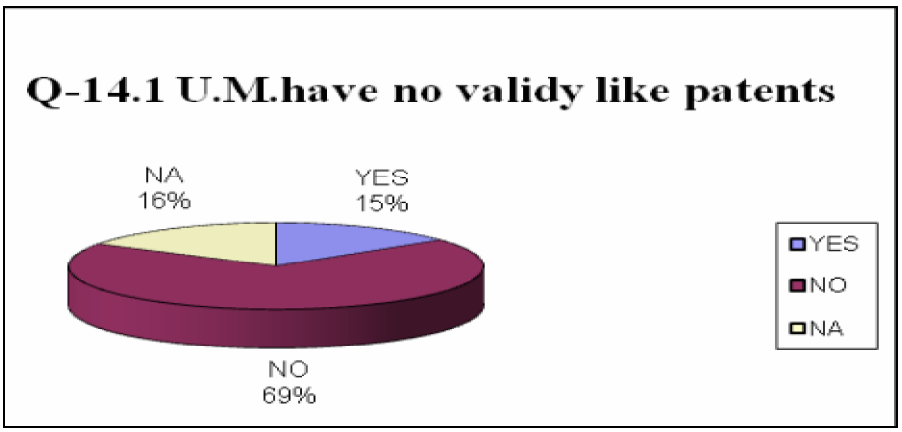
(h) Further continuance of the UM system:- On the matter of further continuance of the utility model protection system in Japan for the promotion of innovative activities,80% felt to continue with the system, while 18% are not in favour. When the same question was asked differently whether the utility model protection system should be abolished in Japan, surprisingly 78% respondents preferred not to answer the question and only 13% respondent agreed to abolition of the system, while 9% were not in favour..



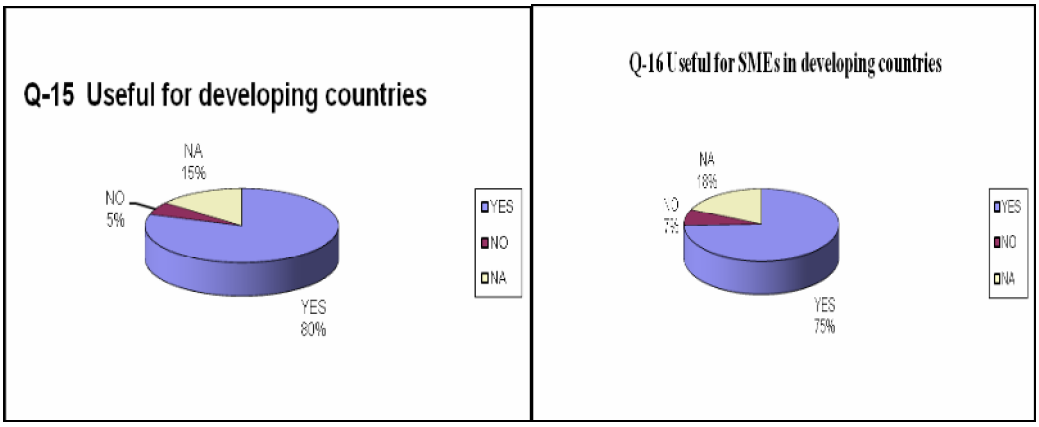
(i) Further amendments in the law:- On the issue of further amendment in the utility model Law to promote the promotion of innovative activities in Japan,44% of the respondents are in favour and 38% are not in favour of any amendments while 18% did not answer the question.



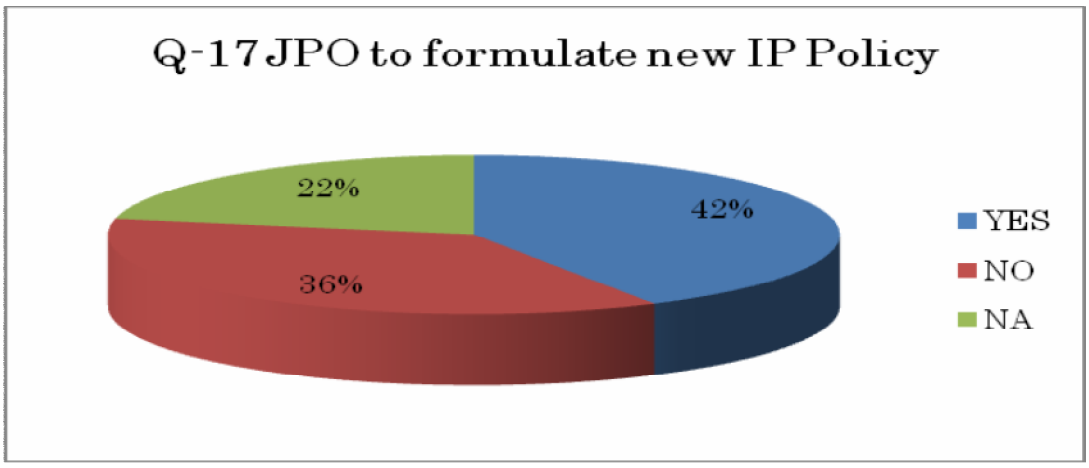
(j) Utility Models have no validity like patents:- In response to the question whether utility model protection has no validity like patent and designs in the countries where economics and technology have already developed,69% did not agree and did not think so, while only 15% respondents agreed and 16% did not responded the question.



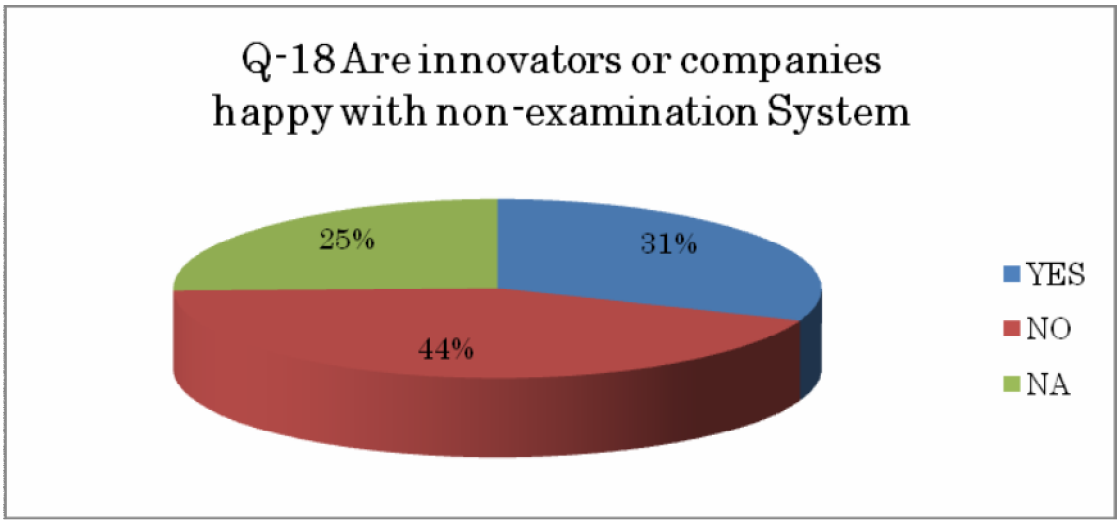
(k) Useful for developing countries and SMEs in developing countries:— On the issue of whether Utility Model protection system is good for developing countries to promote economical and technological development and also for SMEs in developing countries to promote their innovative activities and strengthening their technological capabilities,80%responded affirmatively in case of usefulness to developing countries and only 5% negatively,15% did not respond the question. Similarly in case of usefulness to SMEs in developing countries,75% agreed and only 7% did not agree, while 18% did not answer the question.



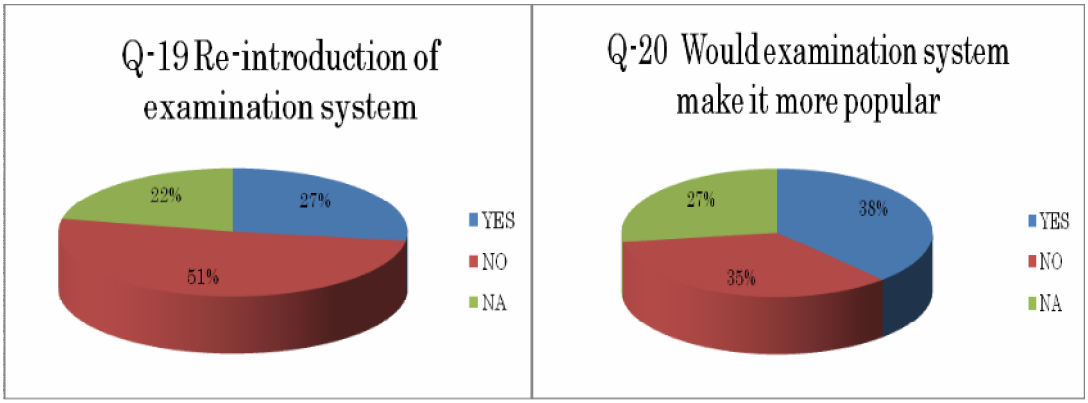
(l)JPO to formulate new IP Policy to promote the System:— On the issue whether JPO should formulate new IP Policy to promote the law, only 42% respondents agreed that JPO should formulate new policies to promote the law, while 36% did not think so and 22% did not respond to the issue.



(m) Are innovators or companies happy with non-examination System:- Regarding the question as to whether the companies/applicants are happy with the amendments made in the law particularly with non-substantive examination and no-novelty determination system,44% respondent felt that they are not happy while,31% felt that they are happy with the present system and 25% did not answer.



(n) Is re-introduction of examination system essential and make it more popular:—On the issue of whether re-introduction of substantive examination is essential for successful Utility Model System,51%respondents did not agree and 27% felt affirmatively, while 22% of the respondents did not answer the question. Similarly when they were asked about whether introduction of substantive examination provision will be able to re-enforce the faith again in the system and again make it more popular amongst users,38% responded affirmatively while 35%(very close) responded negatively and 27%of the respondents(which is quite a substantial) did not prefer to answer the question.



(o) Reply of JPO to certain questions: - Japan Patent Ofiice has furnished following response to the questions mentioned below[207].

(i)Reasons for amendment in 1994:- One of the main reasons for amendment was that under the conventional system based on the principal of examination before the granting of rights, a certain period of time was required between filing of the application and the granting of rights, so it was not possible appropriately to protect the technologies at an early stage with a short lifecycle. Accordingly, while considering an appropriate balance between rights holders and third parties, the system was revised to enable early registration.

(ii) Reasons for amendment in 2004:- In case of term of protection is concerned, under the short period of six years as a protection period, the right holder could not substantially get an injunction in case of infringement. Moreover; the registration period for utility model rights in many countries with a non-examination system (such as Germany, China and the ROK) was ten years. Further at the Industrial Property Council there were many of the opinion that the continuation period for utility model rights should be extended to ten years. Therefore the term of protection was extended to 10 years.

As far as introduction of the patent application based on utility model rights is concerned, it was stated that previously, it was permitted only to change the utility model application to a patent application during the pending period for utility model applications at the JPO (prior to registration setting out the utility model rights). However, as the period from application to registration

[207] The reply to my questions was sent by General Affairs Division, Legislative Affairs Office of Japan Patent Office.

of utility model rights being short, about five months on average, opportunities to change to an application for patent rights were restricted. As such, in accordance with changes in technological trends and changes in project planning, it has been made possible to submit patent applications based on the relevant utility model rights even after the establishment of utility model rights in order to cope with the situations where the establishment of patent rights becomes necessary after the establishment of utility model rights, because the continuation period of patent rights is longer than that of the utility model, the examination process has been conducted, and rights are highly stable. Accordingly the enabling provisions were incorporated in the law.

7.3.4 Analysis of responses from Indian IP Firms: - The questionnaires were also sent by e-mail to all leading patent attorneys located in Delhi, Mumbai, Kolkata and Chennai including NRDC, DRDO, FICCI and CII. However a total of 12 IP attorneys Firms including FCCI responded the questionnaire. Interestingly, the respondents are not only from Delhi alone but also from Mumbai, Kolkata and Chennai. Although, the numbers of respondents comparatively are not much, they represent the responses of the leading IP Firms and Industry Association. Therefore, the opinion expressed by them through the questionnaire becomes very important for analyzing their viewpoint With this limitations, the responses herein are analysed. The response from them is indicated below with the analytical remarks.

Sl No	Questions	Total Respondents	Responded [Yes]	Responded [No]	No Reply
Q-1	Do you feel that current IP laws such as Patent Law, Design Law and Trade Mark Law are sufficient to protect all industrial property creation activities in India?	12	3	9	
It may be observed that most of the respondents (75%) think that current IP Laws are not sufficient to protect all industrial property creation activities in India.					
Q-2	Do you feel that current Patent Law and Design Law are sufficient to protect and promote technical innovative activities in India?	12	3	9	
75% respondents also feel that current patent and design law are not sufficient to protect and promote technical innovative activities in India					

Q-3	Do you feel that current Patent Law and Design Law are sufficient to protect and promote innovative activities in India particularly by SMEs?	12	3	9	
75% respondents also feel that current patent and design law are not sufficient to protect and promote technical innovative activities of SMEs in India					
Q-4	It has been observed that in spite of so much scientific man power in the country, the number of applications for patents and designs filed by the residents is very low as compared to foreign nationals. Do you feel that there are not much Research and Development activities in India	12	6	6	
On the issue of whether there are not much research activities in India as not many applications are being filed for patents and designs by the residents, **the opinion is divided 50% each. However some of them feel that research activities are good but suitable protection system is required.**					
Q-5	Do you feel that level of research activity is very low in the industrial as well as university level and therefore research carried out by them can not be patented and registered as new designs as does not become fit subject matter for patent protection or design registration.	12	4	8	
On the issue of low level research,2/3rd(67%) respondents do not think so.However,33% respondents do agree with this assumption.					
Q-6	Do you feel that research activities are good and can become fit subject for obtaining patent and design but the law is not favorable to protect them?	12	7	5	
On the above issue relating to favourability of law to protect research activities, **58% respondents feel so. However 42% respondents do not think so.**					
Q-7	Do you feel that there is not enough encouragement from the Government to promote the innovative activities?	12	10	2	
On the issue of lack of encouragement from the Government to promote the innovative activities, **83% respondents responded affirmatively, while only 17%** responded negatively as they do not think so.					
Q-8	Do you feel that that India needs very clear and transparent IP Strategy to create IP culture everywhere?	12	12	0	
On the issue of requirement **of transparent IP Strategy to create IP culture**, **all respondents unanimously agreed.**					
Q-9	Do you feel that it is mainly due to lack of clear and transparent IP Strategy in the Country to promote IP culture	12	11	1	
Almost all felt that low IP activities are due to lack of clear and transparent IP Strategy in the Country to promote IP culture.					
Q-10	Do you feel that it is mainly due to lack of IP awareness in the Country particularly amongst SMEs.	12	11	1	
Same is the opinion about the lack of IP awareness among SMEs sector.					

Q-11	Do you feel that Indian companies and industrial sector do not want to spend money in the research and development activities more relying upon using licenses or copying?	12	7	5	
On the above issue relating to **lack expenditure on Research and Development activities** by companies and industrial sector, **58% respondents feel so. However 42% respondents do not think so.**					
Q-12	Do you feel that in order to protect small innovation, India should enact another law separately something like Utility Model law or petty patent law as research and innovative level conducted by industries and university is very low?	12	10	2	
On the issue of **enactment of another law like utility model or petty patent to protect small innovations, 83% respondents agreed for such enactment, while only 17% did not think so.**					
Q-13	Do you feel that there is no need to enact separate law as current law is sufficient to protect such activities?	12	2	10	
The same issue was raised differently, the result is same. It means that **there is a need for enactment of separate law to protect small innovations**					
Q-14	Do you feel the current law can be amended to make separate inbuilt provisions for protecting small innovations for shorter time and within shortest period?	12	6	6	
However, opinion is equally divided on the issue of amendment of the current law to accommodate the protection of small innovations.					
Q-15	Do you feel that utility model protection system would be good for developing countries to promote innovation activities thereby promoting economical and technological development?	12	11	1	
On the issue of **usefulness of utility model protection system for developing countries** to promote innovation activities, **92% responded affirmatively** and only 8% did not agree to.					
Q-16	Do you feel that utility model protection system would be good for India to promote economical and technological development?	12	11	1	
In the context of India also 92% respondents responded affirmatively					
Q-17	Do you feel that utility model protection system would be good for SMEs to promote their innovative activities and strengthening their technological capabilities?	12	11	1	
In the context of SMEs to promote their innovations in order to strengthen their technological capabilities also 92% respondents responded affirmatively					
Q-18	Provisions in Utility Model law vary from Country to Country. In some countries, there is no substantive examination as to novelty, inventive step or industrial application but in some Countries there is a substantive examination either to novelty, or inventive step or, both or may be all. Do	12	8	4	

	you feel that in case India adopts the Utility Model System, it should have substantive examination system?				
On the issue of adoption of utility model system by India,**67% (2/3rd)** of the respondents are of the opinion that, **it should be adopted with substantive examination system**, while 33%(1/3rd) do not think so. However, some of them have commented that examination should be restricted **to novelty only not inventiveness**					
Q-19	Do you feel that in case India adopts the Utility Model System, it should have substantive examination system only to novelty to promote small innovations?	12	8	4	
On the issue of substantive examination **only to the novelty, 67% of the respondents responded affirmatively,** while 33% did not agree to.					
Q-20	Do you feel that in case India adopts the Utility Model System, it should have substantive examination system only to novelty and Industrial application to promote small innovations for better industrial development?	12	7	3	2
On the issue of substantive examination **only to the novelty and industrial application, 58% of the respondents responded affirmatively,** while 25% did not agree to and 17% did not respond to the issue.					
Q-21	Do you feel that in case India adopts the Utility Model System, it should have substantive examination system for novelty, inventive step and industrial application to promote strong IP System?	12	4	8	
On the issue of substantive examination to novelty, inventive step and industrial application,**67% (2/3rd) of the respondent did not agree to, while 33%(1/3rd) still felt to maintain all criteria.**					
Q-22	Do you feel that in case India adopts the Utility Model System, it should be introduced to all fields of technology including pharmaceuticals and biotechnology?	12	8	4	
On the issue of introduction of Utility model system to all field of technology**, 67%(2/3)responded affirmatively while, 33%(1/3rd) did not want for all fields of technology.**					
Q-23	Do you feel that in case India adopts the Utility Model System, it should be introduced to limited fields of technologies such as engineering but excluding pharmaceuticals and biotechnology?	12	3	8	1
On the issue of introduction to limited field such as engineering but excluding pharmaceuticals and biotechnology,**67% respondents do not agree with**, while only 25% responded affirmatively and 1(8%) did not respond to the question..					
Q-24	Do you feel that in case India adopts the Utility Model System, it should be introduced to processes and products both?	12	7	4	1
On the issue of introduction to processes and product both, **only 59% responded affirmatively**, while **33% did not agree to** and 1(8%) did not respond the question.					
Q-25	Do you feel that in case India adopts the Utility Model System, it should be introduced to only for the products?	12	2	9	1

On the issue of introduction **only to products**,**75% of the respondents did not agree to, while only 17% responded affirmatively.**					
Q-26	Do you feel that in case India adopts the Utility Model System, it should be introduced to only for processes?	12	0	11	1
In case of introduction only to processes ,no one responded affirmatively.					
Q-27	Do you feel that in case India adopts the Utility Model System, it should be introduced as separate legislation?	12	7	5	
On the issue of introduction as separate legislation, 58% of the respondents responded affirmatively, whereas 42% responded negatively.					
Q-28	Do you feel that in case India adopts the Utility Model System, it should be introduced as a part of patent law legislation?	12	5	7	
On the issue of introduction as a part of patent law, **58% of the respondents did not agree to.**					
Q-29	Do you feel that in case India adopts the Utility Model System, it should be introduced as a part of Design law legislation	12	2	10	
On the issue of introduction as a part of design law,**83% of the respondents did not agree to**					
Q-30	Do you feel that it is still pre-mature to introduce utility model law in India	12	0	12	
On the issue of whether it is still pre-mature to introduce the utility model law in India, **all respondents unanimously disagreed**. In fact some of the respondents have commented that utility model should have been introduced long back					

CHAPTER-VIII

SUMMARY AND RECOMMENDATIONS

8.1 Review of utility model System: — The protect of small innovations specially those which have practical utility and unable to meet strong inventiveness criteria but short commercial life, many countries across the world, probably over 100 countries have established a system either as a part of their patent law or a *sui-generis* (independent) system enabling the right holders to commercialize the products of such innovations at early stage of development of technology. The system is said to be useful for the SMEs to protect their small and incremental innovations particularly in developing countries. Therefore to achieve the objectives of the research, the study was conducted. Although the empirical study could be possible only within Japan, the developments of utility model system in other countries were also studied closely by reviewing the provisions contained in the laws and regulations of some developed countries such as Germany, Australia, and proposal of European Commission as well as some developing countries such as Republic of China, Brazil, South Korea referred to as Korea, Taiwan China and some other Asian countries including the review of statistical data regarding filing of the applications in such countries.

The developments in the countries as mentioned above are summarized below.

8.1.1 Developed countries:-In case of developed countries, this study has focused on German, Australian utility model laws including the proposals of European commission apart from Japan.

Utility Model protection system in Germany established in 1891 probably appears to be one of the oldest utility model laws; rather it would not be an exaggeration to call it as a mother of all utility model laws. The pertinent point is that the utility model law in Germany was originated due to a need to protect the inventions which had lower level of inventive ingenuity or inventiveness which could not be protected under patent law or under design law. The introduction of utility model encouraged the innovators to protect the utility oriented inventions, particularly SMEs and since then Germany has made tremendous growth in the technological development.

Presently also, the utility model law has been very popular in view of the fact that number of applications filed for utility models are maintaining a steady growth around 20,000 applications per year despite a small decrease in their number recently. However the system is more encouraging to domestic innovators to protect their innovations as about 85% applications are filed by them.

As far as law is concerned, the Germany follows the non-examination system as to the substantive provisions such as novelty, inventive step and industrial applicability during the registration procedure in order to enable the right holders to exploit the products of utility models and issue of novelty, inventiveness and industrial applications are decided at the time of cancellation or when requested to conduct the research for initiating action against the infringer. In case of novelty, it has worldwide publication criteria but for prior public knowledge and use restricted only within Germany subject to certain conditions with respect to publication under certain circumstances. However the standard of inventive step is lower than inventive activity under patent law.

Also, the law has been very flexible in allowing a retrospective date to those applications which are filed as a result of split off from the patent application for the same invention due to not meeting the requirement of inventive activity under patent law. But no utility models are granted for the process and aesthetic creations including plant, animal varieties and human beings. The term of protection is based on renewal basis but not exceeding ten years. However in Germany the utility model law is a separate legislation but the provisions are harmonized with patent law.

In Australia the small innovations having incremental improvements are protected by innovation patents which are equivalent to utility models but have no exclusion for processes like Germany. However, biological processes including the product thereof are excluded from protection. Other criteria as to the scope of protection are similar to standard patent such as manner of manufacture and novelty standard. In case of innovation patent, the inventive threshold is also lower than required for standard patent.

The innovation patent system has replaced the earlier petty patent system in 2001on the recommendation of Advisory Council on Intellectual

Property (ACIP) since petty patent system did not get enough support from the users as the cost of obtaining petty patent was almost same or equal to that for standard patent and further the petty patent was restricted only to one claim and maximum up-to three. The petty patent system was introduced in 1979.The term of protection for innovation patent is 8 years without any extension whereas it was six years in case of petty patents. The number of claims allowed is maximum five. There is no substantive examination prior to the registration or sealing of innovation patent and therefore registration is fast and inexpensive as registration is done within four to five months on the basis of formality checks and without opposition. Although the divisional application from patent application or innovation patent application is permissible, no conversion from patent to innovation or vice versa is allowed and similarly no dual protection of invention is permissible. The law also provides priority period of 12 months in case of domestic application as well as grace period of 12 months in case of prior publication under certain circumstances.

It has been interesting to note from the trend of registration that there are no similarities in the technology groups protected under standard patent and innovation patent. However the technology groups protected under innovation patent are almost same as protected under petty patent except information technology which probably new area not existing at the time of petty patent. Therefore information technology is being protected under innovation patent. The innovation patents are mainly being obtained for consumer goods and equipments, civil engineering items apart from transport and printing technology.

The innovation patent system has been more encouraging than petty patent system as number of innovation patents filed are more than that of petty patents for the simple reason that not only the term of protection is more but also the inventiveness standard is lower and numbers of claims allowed are more and at the same time the system is faster and inexpensive. It has been observed that the system has been exploited more by the domestic applicants rather than foreign applicants as about 80% of the applications are filed by the domestic applicants. This allows domestic innovators to exploit the products of their small or incremental innovations at the early stage and

therefore promoting the technological development by early introduction of new products in the market.

However the number of applications filed for innovation patents in Australia has been quite less (around 1000 to 1200) as compared to standard patents (24,000-25,000).. In case of standard patent number of applications filed by domestic applicants are also less than the foreign applicants but increasingly growing. Therefore the innovation patent system becomes more encouraging and important for domestic applicants than standard patent system and over all the innovation patent system has been very useful for domestic innovators particularly for SMEs.

The European Commission also realized the importance of community utility models particularly for SMEs, whose minor technological innovations often have only a short lifetime and the protection is considerable economic importance within the internal market. Therefore, Commission also submitted proposals in 1997 to European Parliament and Council Directive for the legal arrangements for creating Community Utility Models after having wide range of discussion and consultations on the Green Paper in 1995,in order to protect the technical inventions involving specific level of inventiveness for promoting a better exploitation of the industrial potential of innovation, research and technological development policies, particularly by small and medium-sized firms since the existing system in the member states of European Union differ widely with regard to level of inventiveness and therefore do not have a uniform system for protecting such incremental inventions. Moreover, countries like United Kingdom. Sweden and Luxemburg do not have such system at all.

Under the proposals, the criteria for novelty and industrial application are same as for patent but criteria for inventiveness are slightly lesser than for patent. As to the scope of protection, the subject matter intended to be protected is similar to that of patent provided in EPC. However the processes, pharmaceutical and chemical substances and computer programs are kept out of protection. Other provisions are same as for patent under European Patent Convention such as unity of the invention, disclosure of the invention and date of filing, etc. The commission proposed the grant of utility model rights on the basis of formal examination without any substantive examination

with a protection term of ten years, right of priority, dual application filing facility but no dual protection. The proposal also provides provisions for making search report if so requested by the applicant. The overall objective was to provide rapid, inexpensive, and simple to obtain system where the subject matter can be published early for quick information to the public. However, unfortunately the Commission has withdrawn these proposals in 2005, on the grounds that it was not possible for these proposals to advance further in the legislative process due to differences among the member states.

8.1.2 Developing countries:-In case of developing countries, the study has been restricted to republic of China, South Korea and Brazil. However, the statistical data of some other Asian countries have been reviewed.

In China, the patent law governs the grant of invention patents, utility models and industrial designs since 1984 when the law was enacted first time and came into force from 1985.However, since then the law has been amended twice in 1992 and 2000. The invention patent and utility model both are commonly referred as patent. China has successfully utilized the utility model system for promoting the technological development like Japan. In fact the number of applications filed for utility models have always been more than invention patent and industrial designs and continued upto 2003.However this number has not come down drastically as in case Japan. China continues to receive more than 150,000 applications. In the year 2006, 161,366 applications were filed for utility models thereby achieving a growth rate of about 15% over the previous year and out of which 159,997 applications were filed by the domestic applicants. Therefore the contribution of domestic applicants in case of utility model was about 99% whereas in case industrial design and invention patent, the contribution of domestic applicant was 93% and 58% respectively.

These figures indicate the usefulness and importance of utility model system for promoting the innovation activities of domestic applicants. This also indicates that how best the domestic industry has exploited the utility model system in China for protecting their incremental innovations. This kind of enormous success in the field of intellectual property creations can also be attributed to the increasingly growing research and development activities due

to huge growth in the R&D expenditure. China's R&D expenditure in the recent past has been around USD$ 60 billions which is around 1.3% of GDP.

As regard, substantive provisions in utility model law, the protectable subject matter has been restricted to new technical solution relating to the shape, the structure, or their combination, of a product which is fit for practical use i.e. the devices, articles or related products but to chemical or pharmaceutical substances or their processes. However the invention creation which is contrary to the laws of the States, social morality or that is detrimental to public interest, scientific discoveries, rules and methods for mental activities, methods for the diagnosis or for the treatment of diseases, animal and plant varieties and substances obtained by means of nuclear transformation are excluded from the protection.

As regard novelty, the criteria for utility model related inventions are same as for patent and based on the publication anywhere in the world, prior claiming of the invention in the earlier application and prior public knowledge and use within the territory of the Republic of China. However for the utility model, the inventiveness criteria have been less strict that patent, which have been restricted only to substantive features which represent a progress as compared with the technology existing before the filing date unlike patent where prominent substantive features must represent a notable progress

The registration to utility model inventions is granted only on the basis of formality checks without substantive Examination. The amendments are restricted to the disclosure made at the initial stage without enlarging the scope of the invention. The rights are protected for 10 years without further extension. The applicants are allowed to have priority rights and grace period of six months under certain circumstances. Although, the law does not permit to file dual application for same invention as patent and utility model, the applicant, is however, allowed to file divisional application.

The law also has provisions for search report in order to establish the rights legally in case of action against infringement and in case the invention for utility model does not meet the requirements, the rights can be amended accordingly. Apart from these provisions, there are certain other provisions such as cross licensing, trial procedure for cancellation, etc. The system has been very useful in promoting the IP creation culture in china particularly to

the domestic inventors as rights are granted speedily and cheaply. According to the latest report of WIPO, China has already attained third position in patent applications filing after Japan and USA and recorded the highest growth rate of 32.9% among all[208]. Although WIPO has not yet released such statistics about utility models, China appears to be one of the top placed countries in this area as well.

South Korea, although introduced the utility model protection system in 1908, the first separate legislation for utility model was enacted in 1961.This law has been amended in 1998 and lastly in 2002.In fact in1998, the law was amended mainly to introduce the non examination system and dual application system for the reason that the life cycle of the products resulting from small innovation was very short upto 3to 4 years where examination of such innovations before the grant used to take same period of time therefore the utility model applicants virtually had no real commercial benefits by the protection of the innovation. Therefore with an aim to encourage small and medium sized enterprises by providing quick protection to their inventions, non examination system was adopted.

As far as protectable subject matter is concerned, the protection is granted for the devices which are industrially applicable and which relate to the shape or structure of an article or a combination of article. Therefore the processes and substances are out of protectable subject matter. Further, devices which are identical with or similar to the national flag or decorations; or devices liable to contravene public order or morality or to injure the public health are also excluded from the purview of the protectable subject matter. The computer programs are also not protected under utility model law as they do not come under the device or article category.

As far as novelty is concerned, Korea also follows absolute novelty criteria in case of publication but in case of prior public knowledge and prior public use, it is restricted to within the territory of Korea. However the criterion for inventiveness is that a utility model registration may not be granted to those devices which could easily have been made before the filing of the utility model application by a person with ordinary skill in the art.

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[208] Source: the WIPO Patent Report, 2007 Edition available at WIPO website at http://www.wipo.int/ipstats/en/statistics/patents/patent_report_2007.html visited on August 29,2007

The utility models are registered on the basis of formal examination and claims are restricted to single device or group of devices forming single inventive concept. After registration, the utility model devices are published in order to enable third party to file opposition. A request for technical evaluation of a device claimed in the utility model application or the registered utility model can be filed by any person. The request can also be filed even when the utility model rights are extinguished.

The law provides an opportunity to amend the utility model application when it is pending. The correction or amendments are limited to narrowing the claims, correcting clerical errors, or clarifying ambiguous descriptions in the specification. The correction or amendment is also possible after registration during the procedure of revocation due to technical evaluation report. The term of protection is 10 years from the filing date. A grace period of six months for filing the application after publication of utility model related invention under certain circumstances is also available.

The right of claiming priority for 12 months is also provided with a provision to claim the priority of international application filed under PCT to file utility model application .The provisions to file dual application but no dual protection are also provided and applicant has to abandon either of them. There are also provisions for trial for invalidation and measures against infringement by exercising the right by sending the certified copy of decision of maintenance of the rights to the infringer as a result of the request for technical evaluation report

It was observed that the number of utility model applications dominated over the patent and industrial design applications upto 1996 but thereafter patent applications started increasing. However, upto 2003, the utility model applications still dominated over design applications. In Korea every year more than 35,000 to 36,000 applications for utility model rights are being filed, out of which 98 to 99% applications are filed by the domestic applicants and similar is the case with design applications. Even in case of patents, the domestic applicants are filing around 95 to 97% applications.

The above statistics show that the Korean utility model system has promoted and encouraged the innovative activities of domestic innovators and local industries to enable them to take advantage of early protection for early

commercialization. As in case of China, Republic of Korea has also recorded one of the highest the growth rate of 14.8% in patent application filing and trying to catch up fast with Japan USA, China and European Patent Office.

Apart from China and South Korea, some other developing countries from Asia have also adopted the utility model system for promoting the innovation activities of the innovators, particularly local innovators including SMEs in one form or other. For instance, in Taiwan China, Mongolia and Philippines, it is known as utility model but in Vietnam as Utility solutions, in Thailand as petty patent, in Indonesia as simple patent and in Malaysia as utility innovation. However the statistical data in respect of Taiwan China, Thailand, Indonesia and Philippines was reviewed. It has been observed that the system is very successful in Taiwan China as numbers of applications filed by the domestic applicants are 97% to 98% out of more than 23,000 applications and to some extent in Thailand and Philippines also system is satisfactory. However in Vietnam, Indonesia, Mongolia, and Malaysia, does not appears to be so successful as number of applications for utility models in theses countries are very less but same is the case with applications for patents and industrial designs. One of the reasons may be that some of these countries have substantive examination system prior to the registration.

Brazil also has a long history of utility model system since 1923. The current law is in force since 1996 which was enacted with a view to promote social interest, the technological and economic development of the country.

As to the subject matter, the object of practical use or part thereof which is susceptible of industrial application and presents a new shape or arrangement involving an inventive act that results in a functional improvement in its use or manufacture is protectable as utility model. However, certain inventions are not protectable such as discoveries, abstract principles, scheme, plans, medical treatments, literary and artistic work, computer programs, and living being, etc including the inventions which are contrary to morality and substances.

As to novelty criteria, they are same as in the case of patent i.e. global publication. Law also provides grace period of twelve months to file application even after publication of the invention under certain conditions. One of the important differences between Brazilian law and laws of other

countries is that the application for utility model registration is subjected to substantive examination when a request for such examination is made by the applicant or third party, whereas in Japan, Germany, Australia and South Korea, the registration is granted on the basis of formality examination. The rights are protected for 15 years from the date of filing the application but not less than seven years from the date of its grant.

The law also provides priority rights on the basis of national as well as international applications. The amendments or corrections are allowed until the request for examination is filed. Another difference in the Brazilian law is that all the applications are published after expiry of 18 months from the priority date including early publication on the request by the applicant.

The law also provides for a procedure relating to nullity of the rights and penal provisions against the crimes committed by violating the rights under the law. However there is no provision for filing dual application for patent and utility models for the same invention. The conversion of the application from patent to utility model is not generally permissible; however the same can be possible if allowed by the examiner.

As regard to utility model applications filed in Brazil, the trend indicates that 98% to 99% applications are filed by the domestic applicants, although the total numbers of applications are around 3500 which are also roughly equal to those filed for patents by the domestic applicants. This trend also indicates that utility model system is promoting the protection of innovative activities of domestic innovators rather than foreign applicants but in Brazil such activities appear to be low as compared to China and South Korea, even Taiwan China. Therefore the government of brazil has taken lot of initiatives to promote such research and develoment activities by the domestic Industries especially by Small and Medium-sized Enterprises (SMEs) such as enactment of an Innovation law on July 5, 2004, which is expected to create adequate conditions to encourage a greater number of firms to invest and become involved in technological developments and raising the research and development expenditure, etc..

8.1.3 Japan: - The utility model protection system in Japan was established in 1905 based on the utility model law of Germany which has been several times

since then. The Japanese companies have not only exploited the system in the technological up-gradation process very successfully but also in strengthening their innovative activities. In fact, the amendments in the law were made to ensure that it is more suited to Japanese companies on one hand and public at large on the other hand so that technological information can be disseminated at the earliest. The amendments were also made to suit Japan Patent Office to simplify the registration procedure to facilitate the registration at the earliest.

As to the existing substantive law, currently only devices which are industrially applicable and related to the shape or construction of articles or combination of articles are protected as utility models. Therefore, the processes or substances are not protectable as utility models. However, certain devices, which are liable to contravene public order, morality or public health, are excluded from the protection. Further, the devices which could have been made easily by a person with ordinary skill in the art on the basis of a device or devices already known in the prior art, are also not registrable.

As to the novelty of the subject matter, absolute novelty criteria are followed. It means that prior publication, prior public knowledge, prior public working or use or prior communication within Japan or anywhere in the world is fatal to novelty. However, and there is a grace period of six months for filing of utility model application in spite of its publication or public display under certain circumstances

Since, 1993, the substantive examination system has been dispensed with and now the utility model rights are registered on the basis of formal examination of basic requirements only. The utility models are now protected for 10 years from the date of filing whereas prior to the amendments in 2004, the protection was limited to six years only. Japan also follows a first to file rule in order to determine priority rights. The right of priority on the basis of local utility or patent application or foreign application within one year is also recognized. The priority rights on the basis of international application under PCT are also allowed.

The law also provides conversion of the application from patent application to utility model application or vice versa within certain period of time. Similar conversion of application is also possible from design application

and vice versa. However, there is no provision for dual protection of same invention for patent or industrial design and utility models. This kind of conversion provisions are provided by the amendments in 2004.

The utility model right holder is not permitted to exercise his right or exclusive rights against an infringer until he has given warning in the form of a report of a technical opinion as to registerability of utility model. Accordingly in order to establish the rights, the right holder or any person can make request for such technical opinion. This request for technical opinion can also be filed even for extinguished utility model rights.

There are also the provisions relating to invalidation proceeding, amendments and corrections, infringements, publication of utility models. There are also provisions relating to harmonization with PCT provisions and penal provisions against the offences such as infringement, fraud, false marking, perjury, divulging secrets, secrecy order, etc.

As regard to the statistical data, It was observed from the statistics that since 1905, number of utility model applications always outnumbered the number of applications for patent until 1980 From 1980, although the patent applications started surpassing the utility model applications, their number was still growing increasingly until 1987.it was only when the law was amended in 1993, the filing trend of utility model applications decreased drastically. However, in spite of the decreased rate, domestic applicants have continued to dominate the utility model applications over the foreign applicants. Even in last 10 years, the applications filed by the domestic applicants remain around 85%.

8.2 Conclusions:-

8.2.1. IP for technological and economic development:-In Japan, as observed from the review of the documents that the technological development has undergone through three main phases. In first phase, Japan imported the technologies from the western countries and enhanced the diffusion and adaptation of technological knowledge as well as imitated them in meeting the market demand. In the second phase, Japanese companies, not only adopted the technological knowledge but also began creating new innovations. The innovative activities not only resulted in the improvements

over the existing technologies but also resulted in creating new inventions. This phase is also known as `catch up` phase where it was trying to catch up with western technological development. In fact, during this period, the utility model protection system played very important role in the technological upgradation process. In this process, Japanese companies also used reverse engineering process in their research and development activities and at the same time started attaining the high quality standards in the technology. From late 80s onwards, Japanese companies started concentrating more on the patents rather than utility models.

In third phase of technological development, Japanese companies also started increasing their expenditures more and more on research and development activities for developing new technologies as they realized the economic value of new intellectual property creations particularly patents in wealth creations. In fact now, according to World investment report 2006 released by UNCTAD, there are 9 Japanese companies among top 100 companies of the world according to their assets value. Apart from hundreds of big corporations, there are more than 3 million Small and Medium sized Enterprises contributing to technological and economical development of Japan.

Under this phase, there has been tremendous growth in the intellectual property creations and protection in Japan as Japan Patent office is receiving more than 400,000 patent applications, 36,000 industrial designs and more than10, 000 utility model applications every year. There are several hundreds of companies who are filing more than 500 patents and industrial design applications per year. However, there are 13 companies which are filing more than 1500 patent applications each year. Apart from this, there are at least ten universities which are filing around 50 to 130 patent applications per year.

Now, Japan has become technology exporter even to western countries. According to Statistical Hand Book of Japan 2006, Japan has exported the technology worth of 2,028 billion yen in 2005 which has been up by 14.6% from the previous fiscal year and out of which more than 700 billion yen technology to USA. This has been achieved mainly due to enhancement in R&D expenditure and technical manpower in the research and development activities. According to the statistics, there are 819,900 researchers excluding

supporting staff were working in the research and development establishments in 2005 and 17,845 billion yen which is 3.53% of GDP was spent on research and development.

The empirical study as given in Chapter VII also confirmed and proved that intellectual property plays a very important role in the technological and economical development and therefore same is the case with Japanese technological and economic development. According to the survey conducted during this research study, almost all attorneys fully agreed that the protection of intellectual property is very important for technical and economical development of the country, however, 44% of the IP attorneys agreed that all IP have played a very important role in the, technological and economical development of Japan, whereas 22% opined for patents and 17% each for utility models and industrial designs. In case of companies, 97% companies were of the opinion that protection of IP is not only important for technological and economical development of the country but has also played a very important role in the economic and technological development of Japan. The response from officials of Japan Patent Office was also similar. In fact 94% were of the opinion that the protection of intellectual property is very important for technical and economical development of the country, however in case of Japan,78% responded affirmatively that Intellectual property has played a very important role in the economic and technological development of Japan and only 18% did not think so. Therefore, statistical data related to technological development and economy based on successful utilization and exploitation of industrial property law particularly utility model and also the opinion expressed by the IP firms and companies concludes that Intellectual property has played a very important role in the technological and economical development of Japan.

8.2.2. Role of patents in technological and economic development:-The empirical study also indicated that patents among all IP have played more important role in the technological and economical development of Japan. According to the survey, 84% of the attorneys were of the opinion that in Japan, patents have played more important role rather than utility models and industrial designs. However, 90% of the companies opined that patent has

played more important role and 5% each for utility models and industrial designs.

8.2.3. Role of utility model in technological and economic development:- It has also been observed that although patent protection has played a major role in technology development, Utility Model protection has also played an effective and useful role. According to the survey, 38% IP firms, fully agreed,31% agreed ,23% slightly agreed about affirmative role of utility models in technological development and only 8% disagreed. However in case of companies, 60% opined that utility models have also played an important role in the economic and technological development of Japan. As far officials of JPO are concerned, 96% were of the view that utility models have also played an important role in the economic and technological development whereas 76% agreed that utility model system was also responsible for fast growing industrialization of Japan in the past.

8.2.4. Utility model system is supplementary to other IP system:-It is also observed that utility model protection system is a supplementary to patents and industrial designs. The origin of this system in Germany, Australia and other countries including Japan indicates that this system was designed for those small inventions for incremental improvements which can not fulfill the strict criteria of inventiveness under patent law and at the same can not be protected under industrial designs as such improvements are mainly of utility related functions of a particular product but not to the aesthetic look or outer shape or configuration of the products. Therefore the absence of such system becomes very fatal to the protection and promotion of such small but utility inventions

8.2.5. Utility Model system to encourage and protect domestic IP innovators:-The review of statistical data of utility model applications filed in the countries studied in this research such as Germany, China, South Korea or even Japan indicates that 85 to 98% of the utility model applications are filed by resident or domestic applicants whereas very few applications are filed by the foreign applicants. Moreover, the statistical data of Australia indicates further those technological groups being protected by utility model or innovation patents are different than the technological groups protected by normal patent Therefore the system encourages the domestic innovators to

protect their innovations under utility models in order to enable them early commercialization of their protected products

8.2.6. Utility model system still very much effective and important:- As can be observed from the number of applications filed, utility model protection system is working very successfully in Germany, China, South Korea, and even Taiwan China and upto certain extent in Australia and Brazil. However, in case of Japan it is observed that currently the system does not appear to be interesting to big Japanese companies as big companies are concentrating more on patents but still the system is being exploited successfully by SMEs and individual inventors. According to the responses received from the IP attorneys, companies and officials of Japan Patent Office, although, 15% of IP attorneys fully agreed and 31% slightly agreed to continue further the system, however 38% disagreed to continue with the system. As far as companies are concerned, about 54 to 57% companies are of the opinion that utility model system has lost the relevance in Japan and has become irrelevant for Japanese companies. In case of JPO officials, 58% agreed that now utility model protection system has lost the interest in Japan but 35% still felt its importance and relevance.

8.2.7. System need not be abolished:-Although the majority of the respondents from IP firms and companies are of the opinion that the utility model has lost the relevance in Japan as the research standards of Japanese companies are of much higher level so that they go for patents rather than utility models, interestingly, 47%(8) respondents **disagreed** with the fact that the utility model protection should be abolished in Japan as this has already served the purpose of economic and technological development and also it has no validity like patent and industrial designs and only 23%(3) respondents agree and 15%(2) respondents each fully agree and slightly agree to abolish the law. As far as companies are concerned, 48% of the companies are still in favour of its continuance while 43% are not in favour of further its continuance but 78% of the JPO officials obviously did not respond the question at all. The JIPA who is representing about 1000 big companies is also in the favour of its continuance since the utility model represents the value of the product and therefore in order to maintain global competition, utility model is essential.

8.2.8. Main reasons for low filing of utility model applications in Japan:— The trend of filing of utility model applications in Germany, China South Korea and even Taiwan China indicated increasingly growing growth rate but the trend of applications being filed in JPO indicated the low filing rate of utility model applications. According to the survey, 80% of the companies are of the opinion that amendment in 1993 relating to introduction of non substantive examination is one of the main Reasons, whereas 36% companies felt hat patent and industrial design are stronger than utility models.14% companies were of the opinion that patents and industrial design rights are more authentic than utility models, whereas 10% of the companies were of the opinion that research standard of Japanese companies are of higher standard and therefore they are interested more in patent rather than utility models. However some of the companies were of the view that the scope subject matter being protected is very limited to shapes, etc and term of protection is also very short and therefore UM protection is very limited. However according to JIPA, non examination of application due to which there is a lack of legal authority to execute the rights is one of the main reasons. Shorter term of right is another reason and advancement in Japanese technology is another reason. According to opinion of some IP firm backlog of applications in JPO is also one of the reasons for such low filing of applications.

8.2.9. Utility model system useful for SMEs in developing countries:-The purpose of utility model system is to provide the protection quickly and cheaply and therefore it becomes very attractive for SMEs and individual innovators. Although no empirical data is available for Germany, Australia, China, South Korea, Brazil or Taiwan China as to whether the system is being utilized more by SMEs or small individual innovators, the filing trend of the applications indicates that larger number of utility model applications filed in such countries might have been filed by SMEs or other companies including the individual innovators but individual alone have less chance to file such applications. However according to the research study ,all IP firms (31% fully agreed,54% agreed and 15% slightly agreed and no one disagreed),agreed that UM system is very useful for SMEs in developing countries to promote their innovative activities and strengthening their technological capabilities in order to exploit them at early stage no one disagreed. However in case of

companies, 57% companies felt that it is good for SMEs in developing countries to promote their innovative activities and strengthening their technological capabilities while 37% did not think so and 75% of JPO officials also felt the usefulness of the system to SMEs in developing countries. Majority of IP attorney firms responded to the questionnaire on this issue from India are also of the same opinion.

8.2.10. Utility model system useful for developing countries in general:- Apart from developed countries, such as Germany, Australia, France, on the basis of their filing trend in developing countries like China, South Korea, or Taiwan China except few countries like Vietnam, Indonesia, Thailand, the system appears to be very successful in promoting the intellectual property creation as well as protection. According to the research survey also, almost all IP firms (38% fully agreed, 47% agreed and 15% slightly agreed and no one disagreed) agreed that the system is very useful for developing countries to promote economical and technological development. 57% of the companies in Japan also felt that utility model system is good for developing countries in order to promote economical and technological development.80% of the JPO officials were also of the same opinion. According to the opinion of JIPA, the system is good for developing countries particularly countries having lower economy. According to them, this was the case of Japan some fifty years ago and during that time Japan utilized the Utility Model System for economic growth as well as for technological development. Therefore, the past experience of Japan in successful utilization and exploitation of utility model protection system and also the opinion expressed by the IP firms and companies empirically concludes that Intellectual property plays a very important role in the technological and economical development of a country. Majority of IP attorney firms responded to the questionnaire on this issue from India are also of the same opinion.

8.3. Considerations and justification for utility Model:-The protection of inventions under patent system generally requires not only global novelty criteria but also very strong inventiveness criteria. Apart from this, the procedure for grant is such that it takes very long time in protecting the rights and also the system appears to be expensive. Moreover, there are certain provisions other than general exclusion provisions in the law which prohibit

certain kind of inventions from patent protection. For, instance, in India, under the Patents Act 1970 which has been amended in1999,2002 and 2005,although the procedure has been streamlined to certain extent to grant patent rights early but still procedure can take any time upto 3 years or so. Further, in order to establish the inventiveness, the invention has to involve technical advancement or economic significant or both when compared with existing knowledge. Similarly under the provisions of section 3, the certain inventions relating to mere use of known machines or apparatus or mere arrangement or re-arrangements or duplication of known devices functioning independently of each other are not patentable. Apart from such exclusions, computer programs which have very important role in the information technology, the technology where India enjoys dominance over other countries, are also not protectable. It is also pertinent to mention that computer related technologies based on computer programs, also have very short life due to fast technological development in the field and short technology development period. Except, embodied software technologies such computer related technologies are protectable under copyrights which is not considered so strong in the commercialization of such technologies. Therefore, currently there are no provisions to protect such excluded fields of technologies under the law as well as for those incremental or improvement innovations which have low level of inventiveness but have utility driven functions and at the same short commercial life.

In fact, many studies in the past, have concluded that the East Asian countries such as Japan, Republic of china, Republic of Korea and Taiwan China by having a combination of relatively weak IPR protection and the availability of second-tier patents like utility models and design patents have encouraged technological learning as weak IPRs helped by allowing for local absorption of foreign innovations whereas the second-tier systems encouraged minor adaptations and inventions by local firms and later on, the IP systems became stronger partly because local technological capacity was sufficiently advanced to generate a significant amount of innovation, and also

as a result of international pressure[209]. However, in case of India, despite of weak IPR in past and no second-tier protection, the development of innovative engineering industries has been hindered except, chemical or pharmaceutical industries[210].

As mentioned elsewhere, currently India has about 11.359 millions SSI Units(registered and non-registered) accounting for more than 40% of gross value of industrial production and about 34%of the total export but they appear to have contributed very meager in the development of intellectual property rights creations. Statistical data relating to applications for patents and industrial designs filed in the Indian patent office by the domestic applicants including the one which are filed by Council of Scientific and Industrial Research (CSIR) also indicate that the intellectual property protection activities are very low as compared to many developing countries such as Republic of China, South Korea, or even Taiwan China in spite of high economic growth ,expansion of industrial sector and good scientific manpower.

In order to share the experience of Indian IP attorneys firms and industry organizations such as FICCI, CII, ASSOCHAM, etc, and also to have their views on this system, a questionnaire was prepared and sent to them. Although a small number of attorneys firms responded to the questionnaire, the responded attorneys firms were from Delhi, Kolkata, Chennai and Mumbai including FICCI (the details analysis thereof given chapter VII).According to their majority opinion, the current patent and design law are neither sufficient to protect the all kind of industrial property creation activities nor to promote and protect the technical innovations particularly incremental innovations of SMEs sector. The views of majority IP firms were to enact a new legislation to promote and protect such innovations. It was also observed that none of the responded attorney firm was of the view that it is still per mature to introduce the system in India.

In view of the above circumstances, adoption of the utility model protection system for a country like India may become important not only to

[209] Uma Suthersanen-Utility Models and Innovation in developing Countries, February 2006-UNCTAD-ICTSD Project on IPRs and Sustainable Development, Issue paper No.13,pp-12,available at http://www.unctad.org/en/docs/iteipc20066_en.pdf and last seen on August 23,2007

[210] ibid

promote further the development of intellectual property rights creation and protection but also to stimulate more research activities and innovations by SMEs, although there are factors as well responsible for such low IP activities. In fact the Japan's past experience also indicates similar conclusion as Japan also exploited the utility model protection system successfully in the technology up- gradation and economic re-building after World War II and after catching up with western technological advancements switched over to focusing on patents. In fact, according to latest WIPO reports[211], Japan Patent Office has acquired number one position in the world in patent applications filing surpassing USA and other countries.

8.4 Policy options:-At present, the inventions in India, are protected under the Patents Act, 1970 for their technical features or improvements provided they meet the requirement of novelty, inventiveness and industrial application and also not attracting the provisions of section 3 of the Act. Similarly, the features related to outer shape, configuration, pattern, ornament of designs are protected under the Design Act, 2000.However, any mode or principle of construction or anything which is in substance a mere mechanical device can not be protected under the design law and therefore incremental innovations based on utility functions of the product are not registerable. Therefore in view of the above circumstance, in case India adopts the utility model protection system, following options may be available.

8.4.1. Amendments in the existing patent law:- It has been observed that, the countries like Republic of China including Taiwan China, Brazil and Australia have utility model protection system within their patent law and no separate law exists for protecting small or incremental innovations. In case of adoption of such system, India has option to incorporate the provisions relating to the grant of utility model protection in the patent law by amending the Patents Act, 1970. This can be done either by incorporating a separate chapter on utility models or by integrating the inbuilt provisions for such protection by amending the existing provisions. Since amendment of patent law may cause other old issues to crop up in the process, it does not seem to be best option. Further amendment of patent law also requires harmonization

[211] WIPO Patent Report, 2007 Edition, available at WIPO website at http://www.wipo.int/ipstats/en/statistics/patents/patent_report_2007.html visited on August 29, 2007.

and synchronization of other provisions, a huge exercise is required to be done. However, according to the survey conducted during this research study, majority opinion is in favour of enactment of new legislation.

8.4.2. Amendments in the existing design Law:—As amendment of patent law may be bit difficult for the reasons as mentioned above, another option available is to amend the design law on the same way as suggested above in respect of patent law by providing a new chapter on utility models or amending the existing provisions. However as mentioned above, majority opinion of IP firms is in favour of enactment of new legislation.

8.4.3. New *sui-generis* utility model system:- The countries like Japan, South Korea, Germany and also some other countries in the world have separate legislation on utility model protection system. While establishing separate law, they have also incorporated certain provisions in respect of applicability of certain provisions of their patent and design Law, *mutatis mutandis*. This is another option available to introduce such system and has its own advantages in functioning and implementation. In fact as stated above, the majority opinion favours the enactment of separate legislation rather than making amendment in the existing laws.

However, before adopting the utility model protection system, it is important to take the opinion of all stake holders such as IP attorneys, industry associations, companies, SMEs, and other governmental and non-governmental organizations as the response from the attorneys firms received during this research study is just an indicative of the issue of utility model protection system but was too small to come to a definite conclusion. It was also very difficult to persuade them to send their responses.

8.5 Proposals and Recommendations:—Based on the empirical analysis and the experience of the countries and number of applications being filed in those countries for the protection of inventions by patents, industrial designs and utility models, following proposals may be useful for recommendations

8.5.1. Legislative proposals:—As can be observed that many countries have put in place, a system known as utility model protection, petty patent, or innovation patent to protect small or incremental innovations to encourage domestic innovators in protecting their intellectual property creation. Based on their experience, particularly the past experience of Japan and Germany and

also the successful experience of Republic of China, South Korea and Taiwan china including the empirical evidence based on the responses from IP attorneys firms and companies, and also other policy considerations and grounds if it is felt necessary to introduce a utility model protection system in India, a system with following features is proposed as recommendation.

(a) Protectable subject matter: — From the experience of China, Korea, Germany and Japan, it is important to initially restrict the subject matter of utility model protection to devices, articles, machinery, apparatus, structures or their combination of the product, etc. However to encourage pharmaceutical sector and information technology sector, diagnostic, kits, medical equipments such as probe and computer related inventions particularly embodied software, may be included. However, 67% IP attorneys responded that a system to protect all fields of technology without limiting the scope to certain fields should be introduced. Since the system protects the inventions of incremental innovative ingenuity driven by utility functions of product, it may not be feasible and practicable to protect the processes and substances. In fact some of the countries such as Germany have amended their law to restrict the subject matter excluding the processes and substances.

(b) Un-protectable subject matter:- In order to protect public interest and maintain balance between the individual private rights and public rights some inventions which are against the public order, morality, prejudice to human being, animal and plants including plant and animal varieties, traditional knowledge medical treatments of human and animals or plants, business methods, algorithms. etc, may be kept out of the purview of utility model protection system.

(c) Novelty criteria:- As regard to novelty criteria, the existing criteria for patentability under the Patents Act, 1970,may be continued. However, it may be clearly clarified that as far as prior public use or prior public knowledge or prior working is concerned it should be restricted to within the territory of India as current definition of term new invention makes the provisions little ambiguous.

(d) Inventiveness or inventive step:- The inventiveness or inventive step criteria may be lowered in order to promote the protection of incremental innovations as being followed by majority of the countries.

(e). Grace period:- Most of the countries provide the grace period of 6 to 12 months to file application for utility model in case the invention has been published before the filing of the application under certain circumstances. The provisions provided in the patent law may be continued as such provisions would not amount to loss of novelty on account of publication under special circumstances and continue to encourage the domestic innovators to file the applications for utility models as the benefit of grace period is not generally applicable to foreign applicants for the reasons that they file their applications generally on the basis of priority based on foreign application, filing of which is governed by their national law.

(f) Examination:-Most of the countries, which have been studied during the research, follow the non-substantive examination system to grant the utility model rights except Brazil where the applications are examined on the basis of a request filed for such examination. In fact this is one of the reasons why the system is not so popular in Brazil. Although, when non-substantive examination system was introduced in Japan in 1994, the number of applications for utility model system came down drastically as due to this system Japanese companies felt lack of legal authority in the rights but Japan case seems to be different due to their technological advancement. Generally, in most of the countries, utility model rights are granted only on the basis of basic formal requirements as laid down in the law. This procedure enables the patent offices to the grant the rights quickly within a period of 3 to 6 months to enable the applicants to enjoy the rights and exploit the invention within short period of time. Another important benefit to the IP offices is that they need not appoint technical examiners for the grant of utility rights as the formal requirements can be verified by non technical members. In fact the grant of utility model rights based on non-substantive examination system does not lead to weak protection system as post grant procedure are backed up by the provisions relating to establishment of technical search report based on registerability criteria such as novelty , inventiveness and industrial applicability. If the subject matter is found unregisterable due to lack of novelty or inventiveness, the utility model rights are subject to extinguishment or cancellation. However, the opinion of the majority of IP attorneys in India who responded the questionnaire is that there should be a examination limited to

novelty prior to the examination. If the substantive examination is adopted, the same will lead to backlog of the application which not only lead to chaos but also lead to delay in the registration procedure as exist in case of patents and whole purpose of encouraging the domestic innovators would be defeated. Moreover, this will also increase the burden on IP offices to appoint more technical manpower for substantive examination.

(g) Priority rights:- The priority rights based on prior national or international application as available in the patent law may be considered to be provided. In addition to this priority based on international application under PCT may also be provided in order to harmonize the system with PCT and Paris convention.

(h) Conversion of applications and dual application but no dual protection:- There are countries such as Japan ,South Korea which allow the conversion of patent or design application to utility model application or vice versa within certain period of time. There are also provisions to allow filing of utility model application and patent application for same invention. This will allow the domestic applicants to enjoy the right to file national patent or utility model application as well as international application based on such application. This will also help the applicant in securing the utility model rights quickly to exploit the invention until the patent rights are granted and also provides benefit to prevent the potential threat of infringement by unauthorized person in order to avoid legal complexities. On the other hand, if the dual application is not allowed, inventors must choose, between the utility models and the patent applications, rendering the utility model much less attractive and thereby diminishing its importance[212]. However in the situation, where the invention is also found suitable for patent rights, the provision can be provided to extinguish the utility model rights on the grant of patent rights. Therefore, the provisions may be provided for filing dual application but no dual rights should be granted. Dual protection may lead to unnecessary infringement cases and other legal complexities.

(i) Provisions relating to invalidations but no pre-grant opposition:- As has been observed from the experience of other countries that one of the

[212] Ming-Yan Shieh, `International Developments in Utility Model Protection**:** A Recommended Approach for Taiwan's Utility Model System Reforms`,pp-27,an abstract is available at the website of Institute of Intellectual Property(IIP),Japan which was last visited on August,29,2007 http://www.iip.or.jp/e/index.html.

objectives of the utility model protection system is grant utility model rights quickly for exploitation of the invention at the early stage of the development of the technology, there should not be any pre-grant opposition like patent. However ,the provisions ca be made for invalidation or revocation or cancellation of the rights by the authority within the patent office on the grounds of lack of novelty, inventiveness or industrial applicability or violation of provisions relating to the formal requirements or any provision of the law.

(j) Term of protection:- At present many countries like Japan, China or South Korea provide ten years as term of protection for utility models, whereas Australia provides 8 years term of protection. However Germany initially provides three years which can be extended on the basis of payment of renewal fee for every 3 years but not extending ten years. Similarly European commission also proposed a term of six years which could be extended further every two years twice on the basis of search report if the invention is found meeting the novelty and inventiveness criteria. In view of this India may initially provide the protection period for six years which can be renewed or extended twice every two years provided novelty and inventiveness criteria are met on the basis of search report so requested by the right holder. In fact Japan had to increase the term of protection to Ten years in 2004 after it was shortened to six years in 1993.

(k) Technical evaluation or search report:- Most of the countries provide the provisions relating to technical evaluation or search provisions in order to establish the validity of the rights in case of any infringement. In fact the laws prevailing in Japan, South Korea, Germany, china require the establishment of such rights on the basis of search report in post registration procedure to prevent the abuse of rights by the right holders. The right holder can issue warnings to the infringer only when favourable search report is received failing which he would be liable for compensation or damages to third party. Accordingly such provisions are very important to ensure that inventions which are valid for protection are entitled for such rights. The request for technical evaluation or search report should be allowed to be filed by the right holder or any third party or incase of public interest the controller should be able to prepare *suo- motto* such report. Therefore such provisions may be provided.

(l) Miscellaneous provisions:- The law may also provide the general provisions as provided under the Patents Act, 1970 such as relating to infringement, compulsory licenses or cross licensing in case the exploitation of one technology becomes difficult due to another technology which is also protected. Also penal provisions for violations of the law, first to file rule, person entitled to apply, and publication after the grant. Provisions relating to harmonization with the provisions of the Patents Act, 1970 and Designs Act, 2000 may also be made.

Although, the introduction of utility model protection appears to be useful for country like India by learning from the experience of Japan, Germany and Republic of China, to encourage the intellectual property creation and protection by domestic innovators, it needs to analyze further the pros and cons of the system based on other policy considerations.

8.5.2 Other proposals and recommendations:- Apart from the establishment of utility model law with the provisions as suggested above, the following proposals are considered useful for recommendation.

(a) R&D expenditures: As mentioned earlier, according to the Annual Report 2005-06, Department of Science & Technology, Government of India, the major share in R&D expenditure is from the Central Government source (62.0%).The state Government share is being 8.5%, Higher Education 4.2%, Public sector industries 5.00% and remaining is from Private Sector (20.3%).Further, in terms of percentage to GDP, it is only upto 0.8% to 0.95 of GDP, whereas country like China and Japan spending around 1.3 and 3.5% of their GDP respectively. Further investment by private sector in the research and development activities in these countries is much more than the government investment. Therefore in order to promote intellectual property development and intellectual creation culture, India need more and more investment in research and development activities by private sector although there is no dearth of technical or scientific manpower.

(b) Intellectual Property related policy and Strategy: ─ In the year 2002 ,Japan made the new intellectual property policy[213].These policies come into force with effect from March1; 2003.The policy establishes the Intellectual

[213] Administrative policy speech by Prime Minister Koizumi(154 Diet session) as quoted in the presentation made by the JPO official in the training program for IPR expert group from July 11 to August1,2007 at Asia Pacific Intellectual Property Centre(APIC)

Property Policy Headquarters in the office of the Prime Minister. The policy mainly includes the development of IP policy for each sector, reinforcement and focused support of cooperation among universities, technology licensing organizations (TLO),,realization of a global patent system and acceleration of patent examination, strengthening of measures against counterfeits, protection of IP of small and medium sized/venture enterprises, utilization of the untapped patents of big companies, promotion of Japan brand in the world, and development of IP related human resources.

As mentioned elsewhere, India has also taken several initiatives to promote intellectual property protection and strengthen the Intellectual Property administration with the objective to establish an Intellectual Property Rights (IPR) regime which maximizes the incentives for the creation and protection of intellectual property by all types of inventors but, still there is a further need to establish clear and uniform guidelines through other institutional arrangements such as University Grant Commission (UGC)for promotion of intellectual property in the universities, technical institutions, medical colleges and IITs, in order to protect their research activities at early stage. The IP attorneys in India who responded the questionnaire, majority of them agreed and responded affirmatively that one of the reasons for low IP activities is lack of clear and transparent IP strategy.

(c) Enhanced IP awareness programs:- There are many organizations such as National Research and Development Cooperation(NRDC), Technology Information Forecast and Assessment Council(TIFAC),Ministry of Science and Technology, CSIR, FICCI, CII, ASSOCHAM, IP offices, Ministry of Small Scale Industry and other governmental and non-governmental Organizations are busy in the IP awareness programs among the scientific community and R&D institutions to create IP awareness but still the efforts need to be intensified, particularly drafting of technical specifications and benefits of international conventions and treaties. The majority opinion of Indian IP attorneys also indicate that one of the reasons for low IP activities is lack of IP awareness in the country particularly among SMEs.

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