

National Study on Intellectual Property and Small and Medium Sized Enterprises

India

Under the WIPO Development Agenda

Prepared by

R Saha



World Intellectual Property Organization
Geneva
September 2012

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Executive Summary

The National Study on Intellectual Property and Small and Medium Sized Enterprises - India, under the WIPO Development Agenda has been prepared in accordance with the Terms of Reference provided by the WIPO. The study has relied on information and data collected through surveys, annual reports of the Office of Controller General of Patents, Designs, Trademarks and Geographical Indications, Government of India; publications of Government of India, other published research reports and studies and interviews and opinions of experts. Due to lack of readily available IP related data in respect of micro, small and medium enterprises (MSME), the temptation to shift to large industries was high. However, throughout this study special attention was paid to keep the focus on MSME through sample surveys of varied nature, addressing different IP owners. The study has carefully looked into government policies, current thinking of the government for enhancing the use of IP by MSME, science and technology policy, IPR policies of institutions, tax concessions, bilateral trade agreements, the relationship between academic and research institutions and MSME with specific reference to transferring of IP to MSME, Technology Business Incubators and the innovation ecosystem in India.

Key findings

Awareness about IPR

1. Contrary to the common belief that awareness about IPR among MSMEs is completely missing, some MSMEs appear to be aware of IPRs and comprehend the need for protecting IPR. The awareness seems to be more about trademark and designs as compared to patents. However, the number of MSME engaged in IPR activities is still very small considering the large size of the MSME sector in India.
2. Patents do not seem to attract the attention of many MSMEs. The reasons could be diverse – inadequate knowledge about patents, cost involved in generation, protection and maintenance of patents and inadequate experimental / testing facilities. However, in the area of biotechnology the thinking seems to be different as these MSME give first priority to patents.
3. There are several schemes of the Government of India which aim to create awareness about IPRs among MSMEs, conduct training, and provide technical and financial assistance for protecting IPRs. While it may appear that an excessive number of programmes are being held, for a country like India with such a large population of MSMEs even these efforts are still below the critical level.

Survey findings

4. The per cent of patents granted to MSME is expected to be between 2.8 per cent to 23.4 per cent of all the patents granted to Indian residents by the Indian Patent Office.
5. Among the pharmaceutical MSMEs, it is estimated that 7.3 per cent of MSMEs have been successful in obtaining patents.
6. The current patent activity in terms of patent filings of pharmaceutical MSMEs appears to be on the rise and about 16 per cent of such MSMEs are engaged in patent filing.
7. The awareness of pharmaceutical MSMEs in using internet for advertising their brands and products is very good. 61 per cent of the MSME have their websites which display their trademarks. The remaining 39 per cent are listed in various trade databases but do not have their own websites as yet.
8. It can be seen that against 61 per cent of the pharmaceutical MSME that are active in having

trademarks, only 16 per cent MSMEs are active in patenting.

9. Among the MSMEs in the ICT sector the patent activity is very low and only 1.6 per cent MSME are engaged in this activity.
10. The ICT MSME however, are well aware about the role of trademarks. 80 per cent of the MSME have their own websites and their trademarks are also displayed on these websites. The remaining 20 per cent are visible on the internet in various trade databases.
11. The five-yearly national survey of MSMEs conducted by the Government of India does not specifically mention anything about the pharmaceutical, biotechnology and ICT sectors which are the sunrise sectors in India and will continue to remain so in the coming years.

Databases

12. IPR databases in India such as of patent, trademarks and designs do not indicate if the owner of an IPR is an MSME or not, as this information is not sought in the filing application. It is then very difficult to know and understand the IPR portfolio of MSME. This comes in the way of policy planning and implementation. The task of bringing about the change is not simple for various reasons including other stakeholders who would also like to be identified in the database. In order to make the task a little easier, the pharmaceutical and ICT MSMEs can be included to start with.
13. IPR databases are still not user friendly, do not meet the needs of different users nor are they easily accessible. There is no digitized searchable database in respect of design and copyrights.
14. As registration of MSMEs is not mandatory, most of them are not registered, further the database of the registered companies is not digitized making it difficult to use the information. In the long run it comes in the way of preparing policies and action plans based on the needs of MSME.

Training

15. IPR needs of different sectors may be different and therefore the IPR strategies would need to be calibrated accordingly. These strategies would also have to match the growth of the sector. For example, electronics hardware production and exports are growing fast. The concerned MSME need to be educated about IPR and supported for protecting their IPR in India and other countries in an aggressive manner. Similarly, IPR needs of MSME in the gems and jewellery, drugs and fine chemicals, machinery and instruments sectors, which contribute to exports substantially, should be addressed in a specific manner.
16. ICT penetration in the MSME sector is still very low and Indian MSMEs lack formal ICT based decision making systems. Therefore, such MSMEs having low or no ICT penetration cannot use IPR information systems such as patent and trademark databases either to obtain their own IPRs or to avoid infringement of others. This drawback can be reduced if industry specific IPR databases are available to clusters and industry associations.

Technology Development and Licensing

17. There is no policy making it mandatory for public funded research institutions to (i) direct part of their research to MSMEs; (ii) make their research results known to MSMEs; and (iii) license IP so generated to MSMEs on a priority basis.
18. There are other schemes focusing on incubators, design clinics, and technology up-gradation. These schemes will need to include a strong component of IPRs in framing guidelines for the programmes.

General

19. Filings for obtaining patents and registering trademarks and designs by Indian residents have grown along with the GDP in the last four years which is considered a very positive sign. It may be noted that many of the applicants would be from the MSME sector thereby indicating that growth of IPR related activities in MSME are keeping pace with the GDP.
20. About 80 per cent of trademarks in classes related to textiles including readymade clothes, yarn etc., hand tools and leather in the year 2008-09 are registered in the names of Indians. It is expected that the same picture would be valid in many other classes of trademarks. Further, the sectors of readymade clothes, hand tools and leather are heavily populated by MSME, hence a substantial ownership of these trademarks would be with MSME.
21. India has signed bilateral trade agreements like CECA, CEPA and FTA with many countries. IPR constitutes an important part of all these agreements with coverage varying from agreement to agreement. MSME engaged in export to these countries must be made aware of these aspects by means of publication or internet. Indian foreign missions in these countries may display these features on their websites and advise exporters accordingly. For example, the CEPA with Japan has simplified many procedures which would be an advantage for Indian MSMEs desiring to protect their IPR in Japan.
22. The share of trademarks for services has gone up in the last few years in tune with the larger share of the services sector in the GDP. MSMEs are expected to be the owners of many such marks.
23. The number of geographical indications has been rising for the last three years and the products belong to the MSME sector.
24. MSME engaged in exports face difficulties in enforcing their trademarks in foreign countries due to lack of awareness and otherwise as well. The first step towards this would be to have the trademarks registered in the countries of export. Membership of Madrid Protocol may be useful for addressing most of the issues.
25. MSMEs have expressed concern about the long-time taken in the grant of patents in India. Any explanation that their patent rights start from the date of filing and that infringement proceedings can be instigated to effect from the date of 18th month publication is not really convincing for them. The costs involved in obtaining and maintaining a patent is also considered a roadblock.
26. The handicraft and agricultural products constitute 91 per cent of GI registered so far. There is no common mark for the registered GI to distinguish such products from the non-GI products. Further, efforts towards awareness of the general public and the authorized users of GI are very weak.
27. The agriculture sector is not covered under the umbrella of MSME except that some machinery and other engineering products, and services would be directly related to this sector. Agricultural products like seeds, fruits etc. are not covered under the MSME. It may be recalled that inventions by Indians in this sector are noticeable and most GI belong to this sector.

Recommendations

Awareness

1. There is overemphasis on patents in the name of IPR in the country. There is little realization that other forms of IPR exist and some of them may be more important than patents in the short term, or even in the long run for specific activities. Therefore awareness created among MSME should be well rounded and the topics in such programmes should be carefully chosen and deliberated.
2. The awareness programmes must continue with the support of the government. IPFCs and MSME-DI should play a leading role in this endeavour.

Training

3. A large pool of professionals will be required for advising and guiding MSME regarding management of their IPR as they cannot afford their own IPR cell; this pool is presently not available. IPFC and MSME Development Institute must be engaged in this activity extensively. Patent agents and trademark agents may be trained in other aspects of IPR such as management of IPR and they will then become a useful pool of consultants. The Ministry of MSME may consider launching such a programme. The officers of MSME-DI should also be trained in IPR to become trainers.
4. The absence of trained human resources within MSME may be one reason for the lack of innovations. Many industries may not be interested in this matter as they are already making profits. However, from a long term perspective, the government may think of some enabling systems. For example, weighted tax exemption of 200 per cent or more may be given to companies on a yearly basis for training staff in relevant areas as per pre-determined norms set up by the government.
5. Patents do not seem to attract the attention of many MSMEs. This may be due to several reasons such as not having knowledge about patents, cost involved in generation, protection and maintenance of patents and inadequate experimental/ testing facilities and time involved in obtaining patents. During all training programmes, MSME need to be given correct understanding on patents and their potential to increase revenue.
6. Technologically upgrading MSME without consideration to patents and other forms of IPR may have greater risks of infringement when undertaken by an MSME. If upgrading is planned through licensing from partners in India or elsewhere, due attention should be paid to all IPR related aspects especially in contracts of licensing. This aspect may be included in training programmes.

Databases

7. There is an urgent need to have improved databases for all types of IPR especially copyrights, designs, patents, trademarks to make them user friendly and accessible on the internet. These databases should provide different options for searches for the benefit of different users and uses. With the rise in the ICT sector, the copyright information should be digitized and the access to it should be on the internet. The goal should be to make these databases comparable to those of developed countries in terms of field, search options, reports, speed and accessibility.

Government policy

8. There is a need to formulate and implement a system by which newly innovated products should be considered in procurement by government agencies and not ruled out on grounds of being proprietary items or not having been in the market for a specified time. A system needs to be in place to have newly innovated products evaluated and then considered in the tender. Norms for evaluation should be defined in advance.
9. A policy may be prepared to facilitate transfer of IPR from publicly funded research institutions including academic institutions to MSME on a priority basis so that MSME have the first right to use them. MSME must exercise their rights within a specified time. The institutions which successfully practise this principle should be given some incentives like little higher research grants.
10. The five-year survey of MSME conducted by the Government of India should have specific data on pharmaceutical, biotechnology and ICT MSME which are the sunrise sectors. Further, the survey can also include some elements of IPR.
11. There is a need to expedite the patent granting procedure. A special window may be considered for MSME which are registered.

Incentives for protection of IPR

12. There are few schemes of the government which reimburse costs of obtaining patent or filing patents. There is no support available for maintaining the granted patents. It may be desirable to create a window which can provide help for maintaining patents in India. Duty exemptions may also be considered for patented products and processes. These benefits could be provided to the registered MSME to start with.
13. A separate institutional mechanism may be considered for the purpose of assessing innovations from MSME, providing professional guidance, helping in protection of IPR and arranging funds for protection and initial support for products trial. All the approvals should come in a time bound manner, may be in six months. The institution can have a corpus of say Rs 1000 million. The institution should be managed by right professionals having expertise in IPR, finance, technological evaluation etc. The overall management of the institution should be jointly with industry associations and government.
14. The agriculture sector is not directly covered under the umbrella of MSME except for some machinery, other engineering products and some services. Agricultural products like seeds, fruits etc. are not covered under the MSME. For protecting farmers' varieties of cereals, fruits etc. funds are required in terms of official fees and lawyer's charges. There should be provision for reimbursement of such costs as is available for patents.

Protection of GI

15. India has the potential of utilizing its traditional knowledge for wealth generation and in that process the role of geographical indications cannot be undermined. The beneficiaries of the GI would be MSME. While new GI are being registered by Indians, the government may design and evolve a GI Mark to be put on all GI products for helping the customers identify such products. The GI Mark can be in different forms like hologram, print, embossed, weave, label, electronic chips etc. and an appropriate form may be selected depending on the products. There should be awareness and advocacy programmes for the authorized users regarding monitoring violation of GI and for the general public about the importance of GI through exhibitions, print and electronic media and other means.

WIPO role

16. The Indian experience in respect of Ponni rice raises the issue of granting a trademark, identical with a known name of an agricultural product. There should be an understanding globally that such names should not be registered as trademarks. WIPO may consider taking this further and evolve a consensus among members.
17. The culture of IPR audit is almost a non-existent practice in India. MSME must be educated to carry out an audit of their IPR internally or with the help of an external auditor. It may be worthwhile to develop an audit system for auditing IPR of MSME which can be used as a certification tool for IPR management on lines similar to the ISO system for quality etc. WIPO may play a coordinating role.
18. A concessional fees system for MSME from countries having per capita income up to a certain level may be considered for trademarks and designs for encouraging export from MSME. WIPO may explore the applicability of this recommendation. At the same time a helpdesk may be developed under the aegis of WIPO for facilitating trade by MSME from all member countries.

1.1 Economic Scenario

India has emerged as the fourth largest economy in the world in the last few years due to high growth rates in its Gross Domestic Product (GDP) and rise in per capita income. The phase of low growth in 1980s and earlier was dramatically changed by the economic reforms carried out in the early 1990s. The progress has been noticeable in industrial, agricultural and service sectors. In the industrial sector, there has been substantial expansion and diversification of production methods and management. The investment climate has been encouraging and the investments have been in new technologies and the services sector. The progress has been possible due to the government having created the infrastructure required by the industry such as facilities of power, communication, roads etc. A number of institutions were promoted to help entrepreneurship development, provide finance to industries and to facilitate development of the several skills required by the industry.

A variety of promotional policies were followed by the government to encourage and promote indigenous industries. A number of measures were taken in early years after independence and subsequent period up to early 1990s to help small industries grow. These measures included concessional duties, preferential allocation of resources, imposition of import restrictions, schemes to provide financial support and restrictions on foreign investment. The new economic policy of 1991 brought in a paradigm shift in concept, planning, policy making, and implementation at the level of the government. Many restrictions of yester years were either removed or reduced to be in line with international practices. The flow of foreign capital was made easier and foreign majority investment was encouraged in a variety of industries, import restrictions were by and large removed, and custom tariffs were brought down.

With India becoming a member of World Trade Organization (WTO) the principles of the new economic policy of 1991 were further strengthened and the implementation of policies was accelerated. A shift in policy and legal framework was made in order to meet the obligations of being a member of WTO, to organize and consolidate resources to meet the new challenges related to trade and commerce, and to create a dynamic and sustaining investment environment etc. New laws in the area of Intellectual Property Rights (IPR) were enacted and the extant laws on IPR were modified suitably. A new law on competition was also enacted.

The role of micro, small and medium enterprises (MSMEs) in the economic and social development of India is well established. The MSME sector is a nursery of entrepreneurship, often driven by individual creativity and innovation. This sector contributes 8 per cent of the country's GDP, 45 per cent of the manufactured output and 40 per cent of its exports. MSMEs provide employment to about 60 million persons through 26 million enterprises. The labour to capital ratio in MSMEs and the overall growth in the MSME sector is much higher than in the large industries. The geographic distribution of the MSMEs is also more even. Thus, MSMEs are important for the national objectives of growth with equity and inclusion.

MSMEs manufacture over 6,000 products. Some of the major subsectors in terms of manufacturing output are food products (18.97 per cent), textiles and readymade garments (14.05 per cent), basic metal (8.81 per cent), chemical and chemical products (7.55 per cent), metal products (7.52 per cent), machinery and equipments (6.35 per cent), transport equipments (4.5 per cent), rubber and plastic products (3.9 per cent), furniture (2.62 per cent), paper and paper products (2.03 per cent) and leather and leather products (1.98 per cent).

Key indicators of the Indian Economy

India's financial year is from April 1 to March 31 of the next year. Therefore all the figures will be shown on this basis. For example, the year 2006-07 will cover the twelve months period April, 2006 to March 31, 2007. All the figures and explanations have been taken from the Economic Survey 2011-12 prepared by the Ministry of Finance, Government of India (GOI). Many figures of 2009-10, 2010-11 and 2011-12 are estimates. Table 1 below gives the growth of some of the key indicators:

Table 1 : Growth of Key Indicators

Key indicators	Units	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
GDP (Current market Price)	Rs. million	42947060	49870900	56300630	64573520	76741480	89121780
GDP (factor cost 2004-05 prices)	Rs. million	35643640	38966360	41586760	45076370	48859540	52220270
Growth rate (factor cost 2004-05 prices)	per cent	9.6	9.3	6.7	8.4	8.4	6.9
Savings rate	per cent of GDP	34.6	36.8	32.0	33.8	32.3	Na
Food grains	million tonnes	217.3	230.8	234.5	218.1	244.8	250.4
Index of industrial production (growth)	per cent	12.9	15.5	2.5	5.3	8.2	3.6
Electricity generation (growth)	per cent	7.3	6.3	2.7	6.1	5.5	9.4
Export growth	per cent change	22.6	29.0	13.6	-3.5	40.5	23.5
Import growth	per cent change	24.5	35.5	20.7	-5.0	28.2	29.4
Foreign exchange resources	US \$ billion	199.2	309.7	252.0	279.1	304.8	292.8
Scheduled commercial bank credit (growth)	per cent	28.1	22.3	17.5	16.9	21.5	16.4
Population (projected population as on 1st Oct)	Million	1122	1138	1154	1170	1210	Na

Note: All figures for 2011-12 are estimates. GDP figures for 2009-10, 2010-11 and 2011-12 are also estimates.

(Source Economic Survey 2011-12)

The Indian economy has recovered well from the slow down caused by the global financial crisis from 2007 to 2009. The GDP grew from 6.7 per cent in 2008-09 to 8.4 per cent in 2009-10 and 8.4 per cent in 2010-11. The growth rate in 2011-12 is likely to be 6.9 per cent due to situations both domestic and international. There was a negative growth in agriculture and allied sectors in 2008-09. Erratic monsoons resulted in severe drought like conditions in 2009-10 and unseasonal late rains affected the winter crops in 2010-11. In spite of the erratic behaviour of rain, the food grain production went up in 2010-11 and is likely to go up further in 2011-12. The economic stress was very well managed due to the basic resilience of Indian policies and the other measures adopted by the government at different times.

The GDP growth is composed of growth in many sectors, and the data for the few last years for some selected key sectors is presented in Table 2 below:

Table 2 : Major contributors sector wise in GDP at factor cost at 2004-05 prices (per cent)

Sector	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Agriculture	4.2	5.8	0.1	1.0	7.0	2.5
Mining	7.5	3.7	2.1	6.3	5.0	-2.2
Manufacturing	14.3	10.3	4.3	9.7	7.6	3.9
Electricity & Water supply	9.3	8.3	4.6	6.3	3.0	8.3
Trade, hotels, transport & communications	11.7	10.7	7.6	10.3	11.1	11.2
Financing, insurance, real estate & business services	14.0	12.0	12.0	9.4	10.4	9.1

(Source: Economic Survey 2011-12)

The growth in 2011-12 has generally declined with the mining sector suffering a negative growth. The contribution of electricity and water supply has increased substantially since 2008-09.

Industry and infrastructure

The overall growth of the Index of Industrial Production (IIP) during April to December 2011 reached 3.6 per cent compared to 8.3 per cent during the corresponding period of the previous year. There was reduction in production in the mining sector, particularly the coal and natural gas segments. The growth in the manufacturing sector came down from 9.0 per cent in 2010 to 3.9 per cent in 2011.

There has been a reasonable growth of national highways which has added considerably to movement of goods and also helped in the generation of employment. The civil aviation sector has been growing steadily over the last few years. The scheduled domestic passenger traffic was 108.1 million during January to November 2011 as compared to 90.5 million during January to November 2010.

Indian electronics hardware production increased from Rs 1,107,200 million in 2009-10 to 1,217,600 million in 2010-11, marking a growth of about 10 per cent. Correspondingly, the export of electronics hardware showed a growth of 56 per cent.

The telecom sector continues to grow; the total number of telephones has increased from 206.8 million in 2007 to 926.9 million in 2011. Tele-density, an important indicator of telecom penetration and defined as the number of landline telephones in use for every 100 individuals living within an area, rose from 18.2 per cent in 2007 to 76.8 per cent in 2011. A tele-density greater than 100 indicates that there are more telephones than people. There are about 700 million mobile telephones being used in the country. This number would continue to increase as more people embrace this technology for their use. Further, the users may also go up as new applications surface and innovative solutions are provided. As a result the scope for innovative software solutions is also very high. Evidently, this has opened new avenues for start-ups.

Foreign Direct Investment (FDI) in all sectors of industry and infrastructure has shown a positive growth except in the sectors of rubber and plastics, transport equipment and a few areas of manufacturing.

Food processing is one of the most heterogeneous sectors of manufacturing covering marine products, dairy products, grain, meat products, fruits and vegetables, sugar, edible oils and beverages. This sector has been one of the fastest-growing segments in manufacturing in the current year contributing 27 per cent to average industrial growth.

Overall, the infrastructure sector has had a mixed bag of performances. Telecommunications have done exceedingly well. In addition, the targets in village electrification, railway lines electrification, new and renewal of roads, and under specific schemes have been met. In some sectors, achievements have been less than targeted, the deficient sectors in particular being power, highways and railway lines.

Services Sector

The services sector has been playing a dominant role in the Indian economy for some years now. It constitutes 56.3 per cent of the GDP. Trade, hotels and restaurants as a group, with 16.9 per cent share, is the largest contributor to GDP among the various services sub-sectors followed by financing, insurance, real estate and business services. The compound annual growth of the services sector has been 10.2 per cent for the period 2004-05 to 2010-11 which is higher than the 8.6 per cent GDP growth rate during the same period. In the year 2011-12, the growth is expected to be 9.4 per cent. This sector attracts a high share in FDI with financial and non financial services category contributing 21 per cent of the FDI. The sector has about 35 per cent share in total exports. Services sector is also a dominant sector in most of the states in India.

Trade Developments and Exports

Exports from India have been increasing till 2008-09 with the main contribution coming from manufactured goods. Exports and imports grew by 40.5 per cent and 28.2 per cent during 2010-11. The top four items in India's manufactured goods contributing to exports are engineering goods, gems and jewellery, chemicals and related products and textiles. Engineering goods contributed highest within the manufactured goods followed by other manufactured goods. The export of engineering goods had a high growth rate of 84 per cent in 2010-11 mainly due to growth in the area of machinery and instruments and transport equipment. Table 3 below shows the percentage share of various sectors in the total exports.

Table 3 : Per cent share of various commodities in exports

Commodity	2009-10	2010-11	2011-12
Agricultural & allied products	10.0	9.9	9.9
Ores and minerals	4.9	4.0	2.8
Manufactured goods	67.4	68.0	65.8
(i) Leather & manufacture	1.2	0.9	1.0
(ii) Leather footwear	0.7	0.6	0.6
(iii) Gems & jewellery	16.3	14.7	16.1
(iv) Drugs & fine chemicals	5.0	4.2	3.9
(v) Dyes etc.	1.3	1.3	1.4
(vi) Manufacture of metals	3.1	3.5	2.9
(vii) Machinery and instruments	5.4	4.8	4.6
(viii) Transport equipment	5.5	7.3	8.4
(ix) Electronic goods	3.1	3.5	2.9
(x) Readymade garments	6.0	4.5	4.4
(xi) Handicrafts	0.1	0.1	0.1
Crude & petroleum including coal	16.2	16.8	20.9
Others	1.5	1.2	0.5

(Source: Economic Survey 2011-12)

India has diversified its export and import markets by increasing its trade with Asian countries. The share of this market increased from 33.3 per cent to 57.3 per cent in the first half of 2011-12 while that of Europe and America fell from 26.8 per cent to 19.1 per cent.

Foreign exchange reserves

Foreign exchange reserves increased from US\$ 279.1 billion at the end of March 2010 to US\$ 304.8 billion at the end of March 2011, showing a rise of US\$ 25.7 billion. Of the total increase, US\$ 12.6 billion was on account of valuation gain (due to decline of the US dollar in the international market) and the remaining US\$ 13.1 on account of balance of payment. In 2011-12, the reserves stood at US\$ 311.5 billion at the end of September 2011.

Employment

The country was able to withstand the adverse impact of the global crises and generate employment since July 2009 when an upward trend in employment has been seen. Employment in some selected sectors such as textiles, leather, metals, automobiles, gems and jewellery, transport, information technology, business process outsourcing and handlooms grew by 0.91 million during September 2010 to September 2011.

The progress of the Mahatma Gandhi National Rural Employment Guarantee Scheme that guarantees wage employment on an unprecedented scale has been satisfactory. During 2009-10, 52.6 million households were provided employment. During 2010-11, about 41.0 million households were provided employment till December 2010.

The Sarva Shiksha Abhiyan (SSA), a scheme addressing the educational needs of children in the age group of 6-14 years aims at enrolment of all children in schools, setting up of Education Guarantee Centres, alternate schools, back to school campus, bridging the gaps in gender and in social category, in enrolment and ensuring that there is significant enhancement in the learning achievement levels of children. The progress till September 2010, includes 3,09,727 new school buildings and 2,54,935 schools, 11,66,808 additional class rooms, 3,47,857 toilets, supply of free text books to 87.0 million children and appointment of 1.11 million teachers. (*Economic Survey 2010-11*).

Prospects - short term and medium term

India enjoys the unique advantage of having many favourable factors on its side which are considered important drivers for growth. These drivers are demographic factors, positive investment climate, large domestic consumption and increasing exports. This explains the 15 years of robust growth and nearly a decade of over 30 per cent investment rate. The Indian economy is resilient enough to have an optimistic outlook.

1.2 Intellectual Property Laws of India

India had its own laws on copyrights, patents, designs and trademarks at the time of its independence in 1947. After joining WTO, the existing Indian laws on IPR were revised and new laws enacted in those areas of IPR where no law existed. The Indian laws on patents, copyrights, designs, trademarks, protection of geographical indications, protection of new plant varieties and protection of IC-layout designs are compatible with the provisions of the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) under the WTO. India has no law on protection of undisclosed information as such but does provide protection through the Contract Act 1872. A brief description of these laws is given in the following paragraphs based on various bare Acts.

Copyrights and related rights

India has a long history of copyright law enactment. As early as 1857, a law to protect copyrights was passed. There were many revisions and modifications to the Act through the Copyright Act 1862, Copyright Act of 1911 and the Copyright Act of 1914. After its independence in 1947 a new Copyright Act was promulgated by India in 1958; this Act is known as the Copyright Act of 1957. The Act of 1957 was revised and amended from time to time in 1983, 1984, 1992, 1994 and 1999 to respond to the needs of the stakeholders and in line with the Berne Convention. Some amendments have been made to the Copyright Act recently. Regulations regarding procedures and other matters are prescribed in the Copyright Rules, 1958 as amended from time to time. The Copyright Act extends copyright protection to the following classes of works:

- Original literary, dramatic, musical and artistic works,
- Cinematograph films, and
- Sound recording.

Literary works include books, articles, poems, computer programmes, tables, compilations including computer databases. Dramatic works include recitation, choreographic work, scenic arrangement or acting but does not include cinematographic films. Musical works include music and graphical notation of such work but does not include any words or action intended to be sung, spoken or performed with the music. Artistic works include paintings, sculptures, drawings, engravings, photographs, a work of architecture and any other work of artistic craftsmanship. Cinematographic film includes any work of visual recording and includes sound recording accompanying such visual recording. A sound recording means a recording of sounds from which such sounds can be reproduced. There shall be no copyright in a cinematograph film if a substantial part of the film is an infringement of copyright in any other work. Similarly, if a sound recording contains infringing work, then it will not have any copyright. The law also makes it clear that the separate copyright in any work incorporated in a cinematograph film or sound recording is not affected by the copyright in the cinematograph film or the sound recording.

The following rights accrue to the owners of copyright in case of literary, dramatic or musical works namely, rights of reproduction, issuing of copies of the work, communication to the public, performing the work in public, making cinematographic films, translations and adaptations. In the case of computer programmes the owner has the right to sell or give the programme on commercial rental in addition to the rights available to the owner of a literary work. Similar rights are also available for translations and adaptations. The rights available in the case of original artistic works are the rights to reproduce including depiction in three dimensions of a two dimensional work, communicating to public, issuing copies and adaptation. Similar rights are available to the owners of cinematographic films and sound recordings. The Indian law also provides for special rights to claim authorship of the work and to restrain or claim damages in respect of any distortion, mutilation, modification or such other acts on the work.

The duration of copyright protection or term of copyright in India is the life of the author plus sixty years in respect of a literary, dramatic, musical or artistic work published within the lifetime of the author. However, in the case of cinematograph films, sound recordings, photographs, government works, works of public undertakings and international organisations, the term of copyright is sixty years from the beginning of the calendar year next following the year in which the work was first published.

Certain acts are not considered to be an infringement of copyright and no permission is required from the owner of copyright for performing such acts. Such acts would include a fair dealing with a literary (not being a computer programme), dramatic, musical or artistic work for the purposes of private use including research, criticism or review and also for reporting of current events in a newspaper, magazine or similar periodical or broadcast or in a cinematographic film. Such works can also be reproduced for judicial proceedings and by legislature secretariats for use by members of a

legislature. Reproduction of literary, dramatic, musical and artistic works is also permitted by a teacher or pupil in the course of instruction and examination. In the case of a computer programme, making of backup copies by the lawful possessor is permitted. De-compilation and reverse engineering are also permitted under certain circumstances. Performance of a literary, dramatic, or musical work or the communication to the public of such work or a sound recording in the course of any bona fide religious ceremony or an official ceremony held by the government is also permitted.

While copyright accrues without any formality, the facility for voluntary registration is available. The registration is made by the Registrar of Copyrights. The registration certificate is prima facie evidence of copyright. There is a Copyright Board where appeals can be made against the decisions of the Registrar of Copyrights. A person can also relinquish his copyright with the Registrar of Copyrights.

Civil and criminal procedures are available to the owners in case of infringement of copyrights. Civil suits can be filed in the district courts of the place where the owner is ordinarily resident or where his business is. Civil remedies are by way of injunction, damages, accounts and otherwise as determined by the court. Indian courts have now started imposing punitive damages also.

All acts of infringement are criminal offences. In such a case the punishment can be an imprisonment for a term of not less than six months which may extend to three years and a fine of not less than fifty thousand rupees but which may extend to two lakh rupees. Any person who knowingly makes use of an infringing copy of a computer programme shall be punishable under the Act. The police have powers to seize without a warrant infringing copies of copyrighted works and the machinery and equipment used for such infringement.

There is a provision for issuing compulsory license if during the term of copyright in any Indian work which has been published, the owner refuses to re-publish or allow re-publication of the work or allow translation of the work. For administering the copyrights, the Act provides for copyright societies. There are separate societies for performing rights, sound recordings, cinematograph films and reprography rights.

The Copyright Act also has provisions for extending copyright to foreign works. This is done through a special notification. At present citizens of all countries who are members of the Berne Union or the World Trade Organisation get copyright for their works in India. Through separate notification of the Indian Customs Department, norms are in place on border measures for confiscating infringed copyrighted works entering Indian ports.

Broadcasters get broadcast reproduction rights which entails that no person shall re-broadcast or cause the broadcast to be heard or seen by the public on payment of any charges, make any sound or visual recording of the broadcast, or sell or rent to the public any recording without licence from the broadcaster concerned. These rights last for twenty-five years.

Performers get performers' right over their performance which means that no one can make a sound or visual recording of the performance, or reproduce any such recording or broadcast such recording without the performer's permission. This right lasts for fifty years.

The rights of both broadcasters and performers rights extend to the importation of copies of sound or visual recordings made without permission. There are exceptions to the enjoyment of the related rights on the lines of exceptions for copyright. Civil and criminal remedies are available for infringement of the related rights, again on similar lines as for copyright infringement.

Patents

The history of patent protection in India goes back to the late nineteenth century. The first Patent Act was enacted in 1856. This law gave certain exclusive privileges to inventors for a period of 14 years. The Act of 1856 was replaced by another Act in 1859. Later, the Protection of Inventions Act was passed in the year 1883. The Inventions and Designs Act of 1888 replaced all the existing Acts

in these two areas. Subsequently the Patents and Designs Act of 1911 replaced all the previous Acts. It may be pointed out that India was under the British Empire and these laws had distinct similarities with the corresponding British laws. The first patent Act of independent India was enacted in 1970 which came into force in 1972; this was amended in 1999, 2002 and 2005 with a view to making it compatible with the provisions of the TRIPS. New Patent Rules were notified in 2003 (<http://www.ipindia.nic.in>).

Patents are granted for all types of inventions, products and processes, provided the inventions satisfy the definition of invention in the Act and the inventions are not included in the list of non-patentable inventions prescribed in the Act. The Act defines an invention as a new product or process involving an inventive step and capable of industrial application and it further defines “new invention” as “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 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 the art.” The term “new invention” provides a definition of novelty and should not be confused with the definition of an invention which is eligible for grant of a patent. Inventive step in the Act has been defined as a feature of an 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.

The Indian Act provides an elaborate list of inventions which are not considered patentable inventions under the Act, and are thus excluded from patentability. Many of the exclusions from patentability are, in fact, issues related to inventiveness. These exclusions include frivolous inventions or inventions which claim anything obviously contrary to well established natural laws or which are intended or meant primarily for use which could be contrary to public order or morality or which cause prejudice to human, animal or plant life or health or to the environment. The mere discovery of a scientific principle or formulation of an abstract theory or discovery of any living thing or non-living substances occurring in nature is not patentable.

Mere discovery of a new property or a new use for a known substance is not patentable. 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 is not patentable. Similarly, the discovery of a new form of a known substance is not patentable. Salts, ethers, esters, polymorphs, metabolites, pure form, particle size, isomers, mixtures of isomers, complexes, combinations and derivatives of known substance shall be considered to be the same substance, unless they differ significantly in properties with regard to efficacy. This provision of the Patent Act, now commonly known as Section 3(d) is considered to define the inventive step in the right spirit so that monopoly rights are not awarded for an obvious invention. It is however recognized that the term efficacy needs to be elaborated for practical application of the law. A mere arrangement or rearrangement or duplication of known devices each functioning independently of one another is not patentable. For example, the famous case of *KSR vs. Teleflex* was decided in USA on the grounds that the patent in question granted to Teleflex did not meet the inventiveness criterion as the invention was essentially a rearrangement of known devices.

Mathematical or business methods or computer programmes *per se* are also not patentable. Methods of treatment of humans, animals or of agriculture or horticulture are also not patentable. Traditional knowledge, literary, dramatic, musical or artistic works, topographies of integrated circuits, presentation of information, a mere scheme or rule or method of performing a mental act or a method of playing games, and plants and animals in whole or in any part thereof are certain other non-patentable items.

Seeds, varieties and species and essentially biological processes for production or propagation of plants and animals are not patentable. While submitting an application for grant of a patent, the applicant has to clearly indicate the source from which the biological material from India has been obtained and also that the necessary permission from the competent authority will be submitted. Such permission is to be obtained from the National Biodiversity Authority.

The Indian Patent Act states that patents are granted to encourage inventions and to ensure that the inventions are worked in India on a commercial scale and not merely to enable the patentee to enjoy a monopoly for the importation of the patented article. With a view to keep a balance of the rights of owners and public interest, the Act also provides for compulsory licences in certain circumstances such as lack of access to patented products, heavy pricing by patentees leading to non-affordability, and epidemics. Provisions also exist for granting compulsory licence in cases of requests from countries that do not have manufacturing capacity for a particular drug. For the first time a compulsory license was granted in early 2012 by the Controller General of Patents, Designs, Trade Marks and Geographical Indications (CGPDTG) in respect of a drug for kidney cancer. Bayer has been directed to license the patent on the drug to NATCO, an Indian company. The judgment can be read on the website of the Indian Patent Office.

A patent is granted on application to and after examination by the Patent Office. The application can be made by the true and first inventor of the invention or by any assignee or by the legal representative of any deceased person who was the true and first inventor or his assignee. Provisional application can be made. However, in such cases the complete application should be made within one year of the date of the provisional application. Patent applications are published in the Patent Journal not before 18 months after receipt of the application. The actual publication would usually be within 19 months. An applicant can request for an early publication by paying the prescribed fee. The benefit of early publication is that in case of an infringement of the patent after the grant of the patent, the infringement would deem to start from the date of publication which will now be earlier than 18 months. Therefore, early publication does provide strategic advantage to the patent holder in terms of claiming damages from the infringer. However, it may be noted that early publication does not give any advantage in the priority date of the invention. After publication, the applicant or any third party can request for examination of the same. Decisions of the CGPDTG are appealable to the Intellectual Property Appellate Board (IPAB).

There are provisions for pre-grant opposition and post grant opposition. A representation for pre grant opposition can be submitted to the Patent Office after the publication of the patent application. A representation for post grant opposition can be submitted within one year of the grant of the patent. The grounds for opposing a patent are clearly enunciated in the Act. A representation for the pre grant opposition can be made by any member of the public but the representation for the post grant opposition can only be made by an interested party.

The term of a patent is 20 years from the date of patent application.

Registered Designs

Industrial Design protection in India can be traced back to the Patterns and Designs Protection Act, 1872. It supplemented the 1859 Act for granting privileges to inventors and added protection for industrial designs. The Inventors and Design Act 1888 re-enacted the law relating to designs in a separate part. A new Act called “The Patent and Design Act 1911” was enacted in 1911. The provisions regarding patents were changed through the Patent Act of 1970 but the provisions of the 1911 Act regarding designs continued to be practiced until the new Designs Act 2000, along with the Designs Rules 2001, were brought into force in 2001. (Manual of Designs Practice and Procedure, Controller General of Patents, Designs, Trade Marks and Geographical Indications Government of India, March 30, 2011, <http://www.ipindia.nic.in>).

Design means only the features of shape, configuration, pattern, ornament or composition of lines or colours applied to any article whether in two or three dimensional or in both forms by any industrial process or means, whether manual, mechanical or chemical or their combination. It does not include any mode or principle of construction or anything which is in substance a mere mechanical device. Nor does it include trademarks or artistic works which are protected under copyright.

In order to get registration, the design must be original or novel. A design which has 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 date of filing date or the priority date is not eligible for registration. Similarly designs which are not significantly distinguishable from known designs or combination of known designs or which comprise or contain scandalous or obscene matter are also not eligible for registration.

A design may be registered in more than one class. Registration of design is done in the Design Office at Kolkata, but the application can also be submitted in any one of the patent offices at Chennai, Delhi or Mumbai. Appeals against the decisions of the CGPDTG can be made in the IPAB. The term of a registered design is ten years from the date of application for registration. It can be extended by another five years by submitting an application along with fees to the CG's Office before the expiry of ten years. When a design is registered, the registered proprietor of the design gets a copyright on that design for a period of ten years. The copyright registration can also be renewed once only for five years.

Registration of a design makes it illegal for any person to apply or use the design on any article for sale or import of the article on which the design has been applied, without the licence of the registered proprietor. The penalty for piracy of design is payment of a sum not exceeding Rs. 25,000 to the registered proprietor and damages. Civil proceedings are to be instituted in a court not below that of a District Court.

Trademarks

The history of trademark protection in India can be traced back to the Indian Merchandise Marks Act 1889 which was based on the British Merchandise Marks Act 1887. A proper trademark law was introduced with the enactment of the Trade Marks Act 1940; this was later repealed by the Trade and Merchandise Marks Act, 1958 which in turn came into force on 25th November 1959. This Act consolidated the provisions of the 1889 Merchandise Marks Act and the 1940 Trade Marks Act. The present Act is the Trade Marks Act 1999 which was enacted keeping in view the obligations under the TRIPS Agreement. This Act, along with the Trade Marks Rules 2002, came into force on 15 September 2003. (Draft manual of Trade Marks Practice and Procedure, CGPDTG, January 2009 (<http://www.ipindia.nic.in>)).

A mark includes a device, brand, heading, label, name, signature, word, letter, numeral, shape of goods, packaging or combination of colours or any combination thereof. A trademark means a mark capable of being represented graphically and which is capable of distinguishing the goods or services of one person from those of others. The term trademark would include collective mark and certification trademark. The Act therefore, provides for registration of certification and collective trademarks. Registration can be made in any one or more classes prescribed in the Rules. India follows the Nice classification of goods and services. India also recognizes the concept of well known trademarks. A Trade Marks Registry with headquarters at Mumbai and branches at Kolkata, Delhi, Chennai and Ahmedabad exists for registration of trademarks. An application is to be submitted at the appropriate office depending on the address of the applicant.

Marks which are devoid of any distinctive character or which may serve to designate the kind, quality, quantity, intended purpose, values, geographical origin or the time of production of the goods or rendering of the service or other characteristics of the goods or services, or which have become customary in the current language or in the *bonafide* and established practices of the trade will be refused registration. Further, marks which are of such nature as to deceive the public or cause confusion, or which contain or comprise of any matter likely to hurt the religious susceptibilities of any class or section of the citizens of India, or which comprises or contains scandalous or obscene matter or which are national emblems or names will also not be registered. In addition a mark consisting exclusively of the shape of goods which results from the nature of the goods themselves or the shape of goods which is necessary to obtain technical result or the shape which gives substantial value to the goods will also be refused registration.

The registration is done after due examination and comparison with existing registered trademarks and after publication. Aggrieved persons can represent to the Registrar of Trade Marks before registration. The decisions of the Registrar of Trade Marks are appealable to the IPAB.

Registration of a trademark is valid for ten years, but it can be renewed from time to time before the expiry of the trademark, each time for another period of ten years. Registration gives the exclusive right to the registered proprietor to use that trademark on the specific classes of goods or services. Use of a registered trademark by an unauthorized person is infringement of the rights in that trademark. Civil and criminal remedies akin to those of copyrights are available to the owners of the trademark.

Geographical Indications

India enacted a legislation for the protection of geographical indications through a registration process, in fulfilment of its obligations under the TRIPS Agreement. The Geographical Indications of Goods (Registration and Protection) Act, 1999, along with the Geographical Indications of Goods (Registration and Protection) Rules, 2002, was brought into force on 15th September 2003.

The Act provides for registration of the geographical indication of agricultural, natural or manufactured goods which identifies such goods as originating or manufactured in the territory of a country or a region or locality in that territory, where a given quality, reputation or other characteristic of such goods is essentially attributable to its geographical origin. Through an explanation, the Act clarifies that any name which is not the name of a country, region or locality of that country shall also be considered as the geographical indication if it relates to a specific geographical area and is used upon or in relation to the particular goods originating from that country, region or locality, as the case may be.

The application for registration of a geographical indication is to be made to the Registrar of Geographical Indications which is a part of CGPDTG. Any association or persons or producers or any organisation or authority established by or under any law for the time being in force representing the interests of the producers of the goods concerned, can apply for registration. The application will be examined, if necessary in consultation with a consultation group consisting of experts, and the accepted applications are advertised in the Geographical Indications Journal inviting objections if any. Opposition has to be filed within three months. The objections will be examined through a quasi judicial process and depending on the outcome, a geographical indication is registered or not. An appeal procedure exists against the decisions of the Registrar of Geographical Indications, and the appeal can be filed in the IPAB.

The registration of a geographical indication is for a period of ten years but can be renewed from time to time before the expiry of the geographical indication, each time for another period of ten years. The Act also provides for registration of the authorised users of the goods in question. These registrations are also for ten year periods. Registration confers on the authorised users the exclusive right to the use of the geographical indication in relation to the goods in respect of which the geographical indication is registered. Any unauthorised use is an infringement. No infringement action can be taken against an unregistered geographical indication. The registered proprietor and authorised user can initiate action for getting relief against infringement.

The Government can notify the goods which are entitled for higher level of protection as per the TRIPS Agreement. Civil and criminal remedies, on the lines of such remedies for trademark infringement are available for geographical indication infringements. Geographical Indication rights are not assignable. However, legal heirs, who produce or manufacture the goods in question as per the requirements, can inherit the rights.

Protection of I C Layout-Designs

The Semiconductor Integrated Circuits Layout-Design Act, 2000 was enacted by India in pursuance of its obligations under the TRIPS Agreement. The Act, along with, the Semiconductor Integrated Circuits Layout-Design Rules 2001 was brought into force on May 1, 2004.

The Act provides for registration of layout designs of semiconductor integrated circuits. A layout-design which is not original or which has been commercially exploited anywhere in India or in a convention country for over one year, or which is not inherently distinctive or which is not inherently capable of being distinguishable from any other registered layout-design will not be registered. Registration of a layout-design is valid for ten years from the date of filing.

Protection of New Plant Varieties

India enacted the Act “Protection of Plant Varieties and Farmers’ Rights Act, 2001”. This Act was developed to be in compliance with the TRIPS requirement to bring a *sui generis* legislation for protecting new plant varieties. However, this Act is not in total consonance with the UPOV as the Indian law provides that a farmer shall be entitled to save, use, sow, re-sow, exchange, share or sell his farm produce including seeds of a variety protected under the Act. However, the farmer cannot sell the seeds under the brand name of the protected variety. This provision of the Indian Act is an addition to the general principles of UPOV keeping in view the large number of poor farmers who do not have large land holdings and cannot afford to buy seeds every season. The Indian Act provides for farmers’ rights meaning thereby that farmers’ varieties can be registered even after the variety has been in use for a period specified in the Act. The Act is almost the same as the UPOV in terms of technical parameters used for registration of new plant varieties. To be eligible for registration, it is essential for a new plant variety to be novel, distinctive, uniform and stable. Extant varieties can also be registered subject to certain conditions. Applications for registration can be made by plant breeders, farmers or their assignees.

Registration confers an exclusive right on the breeder or his successor, his agent or licensee, to produce, sell, market, distribute, import or export the variety. However, researchers are free to use the variety for conducting experiments or research. Any person is also free to use the variety as an initial source of variety for the purpose of creating other varieties.

A farmer who has bred or developed a new variety is also entitled for registration and other protection in a like manner as a breeder of a variety under the Act.

Registration of a new plant variety is valid for eighteen years from the date of registration in case of trees and vines and for fifteen years in other cases. Registration of an extant variety is valid for fifteen years only from the date of the notification of that variety by the Central Government.

Civil suits can be filed in District Courts against infringers of the rights conferred by registration. The courts can grant relief such as injunction and, at the option of the plaintiff, either damages or a share of the profits.

False application of the denomination of a registered variety is a cognizable offence. First time offences are punishable with imprisonment for a term which shall not be less than three months but which may extend to two years, or with a fine which shall not be less than Rs. 50,000 but which may extend to Rs. 500,000. A person who has already been convicted of an offence under the Act is punishable for the second and for every subsequent offence with imprisonment for a term which shall not be less than one year but which may extend to three years or with fine which shall not be less than Rs. 200,000 but which may extend to Rs. 2,000,000.

Protection of Undisclosed Information

India does not have any specific law for protection of undisclosed information or trade secrets. It is possible to utilize the Indian Contract Act 1872 for protecting trade secrets in all business dealings

through execution of written contracts. This Act is silent on how to maintain trade secrets and business confidential information. However, India being a common law country can resolve cases related to unlawfully obtained information. It is however, reckoned that in the absence of a specific law on this subject it may be difficult to handle a variety of cases emanating from different business sectors, industries, universities and R&D institutions.

Intellectual Property Administration

In India, the intellectual property laws are administered by different departments of the Central Government. Consequently, the administrative set ups for the different intellectual property laws are also different. The Copyright Act is administered by the Copyright Registry at New Delhi under the Ministry of Human Resources, Department of Higher Education.

The Patents Act, Designs Act, Trade Marks Act and the Geographical Indications of Goods (Registration and Protection) Act are administered by the CGPDTG. The headquarters of the Patent Office is at Kolkata and there are branch offices at Chennai, New Delhi and Mumbai. The headquarters of the Trade Marks Registry is at Mumbai. It has branch offices at Ahmedabad, Chennai, Kolkata and New Delhi. The design wing of the Patent Office is at Kolkata. The Geographical Indications Registry is at Chennai. The IPAB hears the appeals against the decisions of the CGPDTG.

The Protection of Plant Varieties and Farmers' Rights Act is administered by the Plant Varieties and Farmers' Rights Authority, New Delhi, under the Ministry of Agriculture. Decisions of the Authority or the Registrar can be appealed to the Plant Varieties Protection Appellate Tribunal.

The Department of Information Technology, Ministry of Communication and Information Technology, New Delhi, administers the Semiconductor Integrated Circuits Layout-Design Act.

1.3 Membership of International Treaties

India is a member of many international treaties and conventions namely, the Berne Convention for the Protection of Literary and Artistic Works, the Paris Convention for the Protection of Industrial Property, Agreement on Trade Related Aspects of Intellectual Property, Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure, Nairobi Treaty on the Protection of the Olympic Symbol, Patent Cooperation Treaty, World Intellectual Property Organisation (WIPO) Convention and the Universal Copyright Convention.

1.4 Bilateral agreements

India has entered into bilateral trade agreements with some countries in the recent past. These agreements are not really free trade agreements (FTA) but are precursors for FTA. A variety of agreements such as Comprehensive Economic Cooperation Agreement (CECA), Comprehensive Economic Partnership Agreements (CEPA) and Preferential Trade Agreements and FTA have been signed by India with Association of Southeast Asian Nations (ASEAN), Bhutan, Chile, Finland, Japan, Malaysia, Nepal, Singapore and South Korea. There are on-going negotiations with some other countries for finalizing trade agreements and also for enhancing the existing agreements. These countries are Australia, China, Korea, Indonesia, Maldives, Mongolia and New Zealand. These agreements would primarily look at facilitating trade and commerce, and stipulating principles and methods for trading. Tariff on items of import would always be one common parameter. Intellectual property rights are being covered in some agreements and the scope of coverage varies from country to country.

The CECA with Singapore has an Article on protection and distributions of IPR and other rights of proprietary nature. The Parties agreed that they would ensure adequate and effective protection of IPR or other rights of a proprietary nature resulting from the cooperation activities undertaken pursuant

to the agreement. Further, rights to IPR would be distributed on the basis of mutually agreed terms taking into account the contribution of each property, both to the previous and resulting intellectual property. (CECA between the Republic of India and the Republic of Singapore; <http://commerce.nic.in>, the official website of the Government of India, Ministry of Commerce and Industry).

The CEPA with Japan also has a chapter on IPR and the coverage is quite extensive. Both Parties agreed to adhere to the TRIPS Agreement for adequate, effective and non-discriminatory protection of IP. Neither Party shall require the certification, by any person other than the applicant or its representative, of the translation of an earlier application except in cases where there are doubts about the accuracy of translation. Further, neither party shall require that the submission of power of attorney be completed together with filing of the application as a condition for according a filing date to an application. There is flexibility on patenting of software and each party can exercise its laws in this respect. In case of trademark there is a provision for respecting well known trademarks in each or both countries. The two countries will allow an applicant to file a request to the competent authority that its application for registration of trademark be examined in preference to other applications subject to reasonable grounds and procedural requirements. Each Party shall ensure protection of geographical indications in accordance with its laws. Both Parties agreed to provide protection against acts of unfair competitions in accordance with the Paris Convention. (India Japan CEPA; <http://commerce.nic.in>).

The CEPA with South Korea stipulates following the provisions of TRIPS in respect of protection and enforcement. Both Parties will enhance their cooperation in the field of IP through workshops, education, fairs etc. The Parties may cooperate in international searches and preliminary examination under PCT, facilitation of international patenting process, joint prior art searches and exchange of prior art search results, licensing of IP, plant variety protection etc. (Source: India Korea CEPA; <http://commerce.nic.in>)

Experience will tell us how successful these cooperation measures would be in real practice. It is clear that India is promoting IPR in trade agreements which could build mutual faith in joint bilateral efforts. Inclusion of concepts related to foreground and background IP in agreements is a step towards enhancing mutual faith and fair trade practices. This also reflects a healthy change over the earlier practices which did not pay attention to foreground and background IPR in cooperative activities. MSME find specific reference in these agreements and the MSME may turn out to be one of the major beneficiaries through these agreements. These enterprises will have to pay special attention to IPR issues while trading with the above partner countries and other countries which may become trading partners in the days to come. For example, the CEPA with Japan has made the process of filing IPR applications in Japan much simpler by easing some procedures. It is important that MSME are made aware of these agreements so that they feel confident in trading and also take adequate steps to protect their IPR. Further, professional assistance would have to be provided to MSME to handle such contracts and situations through training and consultancy services.

1.5 IPR statistics

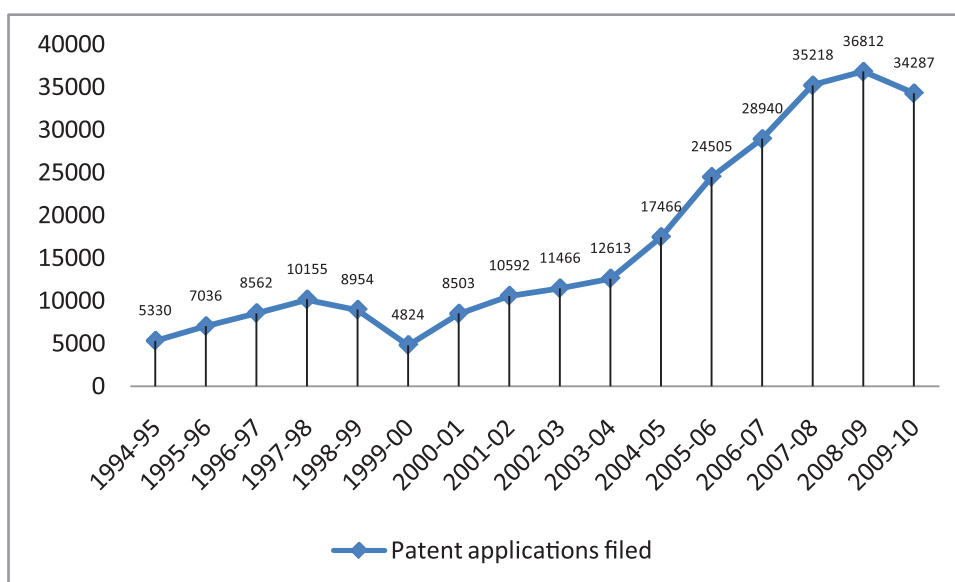
The growth in the IPR activities in India in the last decade has been quite remarkable in terms of its quick response to the new environment created by the WTO and TRIPS. Immense efforts have gone into creating awareness about IPR, capacity building within the country in terms of training of human resources, creating IPR facilitation centres, IPR cells in institutions and industries and designing new policies towards IPR. There has been an all-round change in industries, academic institutions, R&D institutions, government both Central and State, industry associations, civil societies and so on in respect of perception and understanding about IPR. An evidence of this phenomenon taking place is the growth in patents filing and granted, trademark registration, design registrations and GI registrations.

The data on filing of applications for IP rights and grant of these rights have been taken from the Annual Report 2009-10 of the office of the CGPDTMG (the latest report available in the public domain during the study period). Previous annual reports have also been used when required for including data for earlier periods.

Patents

There have been a lot of activities in the patent domain in India. So great is the emphasis that the thinking about IPR has become a little skewed, as for many people IPR and patents are synonymous. The patent laws in India have undergone a paradigm shift after India became a member of the WTO and the Agreement on TRIPS. Patent filings have been increasing since 1995-96. Except for a dip in 1999-2000 and then in 2009-10, there has been a regular growth in the filing as can be seen from the Figure 1. The growth was in any case expected after 1995 when India joined the WTO.

Figure 1 : Patent filings in India



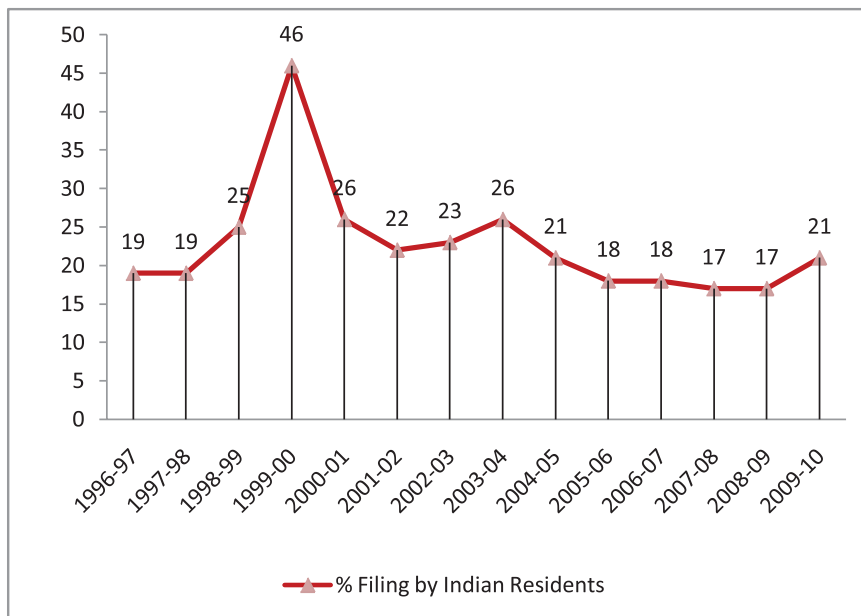
At the same time it may be noted from Table 4 below that the total number of filings by Indian residents has moved up considerably from 3218 in 2003-04 to 7044 in 2009-10.

Table 4 : Filing of patent applications in India

Year	Number of filings by residents	Total number of filings	Per cent share of filings by Indians
2000-01	2179	8503	25.6
2001-02	2371	10592	22.3
2002-03	2693	11466	23.4
2003-04	3218	12613	25.5
2004-05	3630	17466	20.7
2005-06	4521	24505	18.4
2006-07	5314	28940	18.3
2007-08	6040	35218	17.1
2008-09	6161	36812	16.7
2009-10	7044	34287	20.5

The share of Indian residents in the overall filings has come down from about 25 per cent in 1998-99 to 20.5 per cent in 2009-10. The recent increase in 2009-10 is due to increased filings by Indians and reduced filings by foreigners at the same time. Therefore the recent increase in the per cent share in filing by Indians cannot be attributed only to increased filing by Indians.

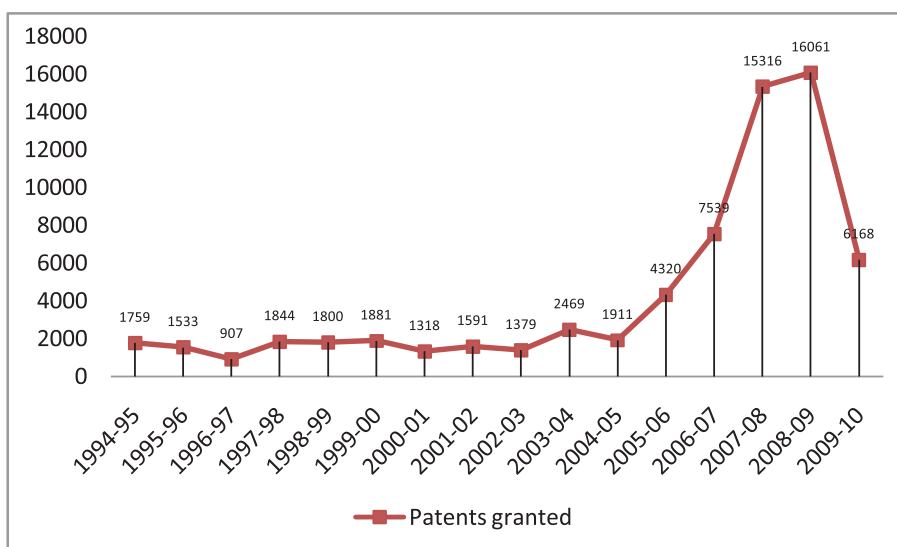
Figure 2 : Filing of patent applications in India by Indian residents (per cent)



One of the main reasons for the increase in the number of patents filing is that India is being viewed as a good target country for technology exploitation and new business opportunities by foreign companies. The increase in domestic filings is largely due to increased level of awareness about patents in various sectors such as industry, academics, research institutions and government departments and a better understanding about the importance of patents in facing competition, both internal and external.

Figure 3 below gives the number of patents granted and the trend in patents granted over the last sixteen years. Since the year 2004-05 and up to 2008-09 there has been a rapid growth in the number of granted patents. In the last six years the average growth has been about 148 per cent per year. It may also be noted that the filings in the same period has not grown so rapidly.

Figure 3 : Patents granted in India



There is a sharp decline in the number of patents granted in the year 2009-10; the number has come down from 16061 in 2008-09 to 6168 in 2009-10. The primary reason for this decline seems to be decrease in the number of patent examiners. The Annual Report of the office of CGPDTG, 2009-10 states “About 55 Patent Examiners left the organization during 2004-09 and no recruitment took place during this period. Further, 47 patent examiners were promoted as Assistant Controllers during January 2009 and hence were not available for examination. This explains the comparative low figure of examination and grant during 2009-10.” Table 5 gives the distribution of patents granted to Indian residents and foreigners. It can be seen that the number of patents granted to foreigners has been increasing since 2004-05.

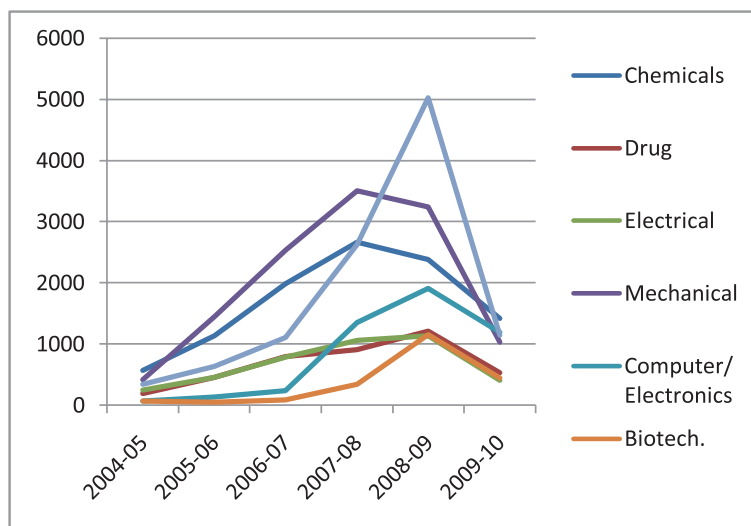
Table 5 : Patents granted in India

Year	Indian residents	Foreigners	Total patents granted	Per cent granted to Indians
2004-05	764	1147	1911	39.9
2005-06	1396	2924	4320	32.1
2006-07	1907	5632	7539	25.3
2007-08	3173	12088	15261	20.8
2008-09	2541	13520	16061	15.8
2009-10	1725	4443	6168	27.9

Table 6 below shows the number of patents granted in India in the last six years in different fields of technology. The column “others” include many fields such as biomedical, bio-chemistry, bio-informatics, physics, textiles, agriculture, civil engineering and food. The number of patents granted has been growing since 2004-05. The growth in the areas of chemicals, drugs and biotech may be partially attributed to the introduction of product patents in India in 2005. An increase in patents related to electronics and computer is noteworthy and this may be due to a change in the Patent Act relating to computer related inventions.

Table 6 : Patents granted under various fields of inventions

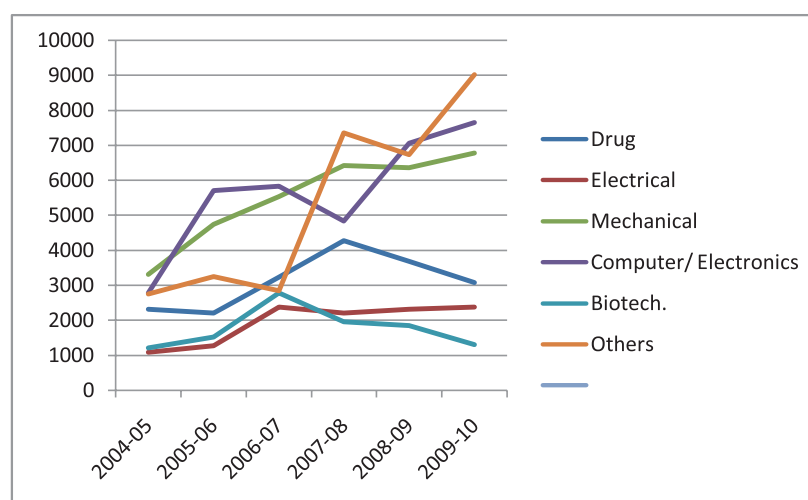
Year	Chemicals	Drug	Electrical	Mechanical	Computer/ Electronics	Biotech.	Others
2004-05	573	192	245	414	71	71	345
2005-06	1140	457	451	1448	136	51	637
2006-07	1989	798	787	2526	237	89	1113
2007-08	2662	905	1067	3503	1357	341	2628
2008-09	2376	1207	1140	3242	1913	1157	5026
2009-10	1420	530	404	1024	1195	449	1146



It can be seen from Table 7 below that during 2004-05 to 2009-10 there has been a general increase in the number of applications filed in all areas except in the areas of drugs and biotechnology in 2009-10. Similarly, the number of patents granted in the areas of drugs, computers/ electronics and biotechnology has been going up. However, in the year 2009-10, there is a sharp decline in the number of patents granted in these areas (Table 6). In 2008-09 the ratio of applications filed by foreigners and applications filed by the Indian residents was about 4:1. However, in some areas of technology like bio-chemistry, physics, material science and polymer science this ratio is about 7:1.

Table 7 : Patent applications filed under various fields of inventions

Year	Chemicals	Drug	Electrical	Mechanical	Computer/ Electronics	Biotech.	Others
2004-05	3916	2316	1079	3304	2787	1214	2749
2005-06	5810	2211	1274	4734	5700	1525	3251
2006-07	6354	3239	2371	5536	5822	2774	2844
2007-08	6375	4267	2210	6424	4842	1950	7343
2008-09	5884	3672	2319	6360	7063	1844	6724
2009-10	6014	3070	2376	6775	7646	1303	6218



Annual reports of the patent office have been providing data on break up of patent applications filed by Indians and foreigners in some selected areas such as bio-medical, bio-chemistry, bio-informatics, physics, agriculture etc. For the purpose of analyzing filings by Indians in these areas, data for the year 2009-10 has been taken in Table 8 below.

Table 8 : Patent applications filed under new fields of inventions during 2009-10

Field of invention	Applications filed by Indians	Applications filed by foreigners	Total number of applications	Per cent of applications filed by Indians
Bio-medical	70	640	710	9.8
Bio-chemistry	27	190	217	12.4
Bio-informatics	0	235	235	0
Physics	122	1242	1364	8.9
Civil	50	390	440	11.4
Textiles	32	324	356	8.9
Metallurgy	34	319	353	9.6
Agriculture	40	106	146	37.7
Polymer science	49	848	897	5.5

Except in the area of agriculture, the share of Indian applicants in the above areas is much lower than the overall share of 20.5 per cent in total filings during the year 2009-10. A share of 37.7 per cent in the area of agriculture is noteworthy and needs to be pursued further as this was the trend in 2008-09 as well. It is indicative of the fact that the inventive activity in this area in India is higher than that in many other areas.

Indian residents have been filing patents in other countries. In order to have an idea about their foreign filings, patents granted to Indian assignees by the USPTO were studied. The data on applications filed in USPTO by Indians and patents granted are given in the Table 9 below. The growth has not been much. On the contrary, the filings in USA by Indian saw a sharp decrease in 2010.

Table 9 : US patents granted to Indian assignees

Year	Patent applications filed	Patents granted
2006	309	257
2007	365	266
2008	378	267
2009	289	254
2010	106	363

(Source: <http://www.uspto.gov>)

Registered Designs

The growth in filing of design applications is not high and is not rapid. It can be seen from Table 10 that in the six year period considered here, the growth in filing of design applications on an average has been about 15 per cent per year up to 2008-09, with a decline in the 2009-10. The same growth is seen in case of designs registered. It is also observed that filings by Indians are higher than that by foreigners.

Table 10 : Design applications filed and registered in India

Year	Applications filed by Indians	Applications filed by foreigners	Total applications filed	Designs registered by Indians	Designs registered by foreigners	Total Designs registered
2004-05	3093	924	4017	3166	562	3728
2005-06	3407	1542	4949	3439	736	4175
2006-07	3584	1937	5521	2877	1373	4250
2007-08	3873	2529	6402	3026	1902	4928
2008-09	4308	2249	6557	2985	1787	4772
2009-10	4267	1825	6092	3552	2473	6025

In the year 2005-06 designs registered in respect of Indians is greater than the number of applications filed in that year which may be due to a spill over of a few applications from the previous year. Class-wise information on registered designs is not normally available and of late the Patent Office has not been making the information public. It would be desirable if such information is published for the benefit of all the stakeholders as this would be useful for understanding the level of activity in different classes. It is only in the Annual Report for 2007-08 that the Indian Patent Office had published class-wise break up and the per cent share of various classes in the overall filing of design applications; this data shows that almost 70 per cent of design applications fall under these classes (Table 11).

Table 11 : Class-wise share in design applications filed in India in 2007-08

Class	Description of class	Per cent share
9	Packages and containers	18
13	Equipment for production, distribution or transformation of electricity	10
7	Household goods-china, glassware etc	8
12	Means of transport or hoisting	7
1	Bakers' products	6
14	Recording, communication equipment	6
23	Fluid distribution equipment	6
6	Furnishings-furniture, seats, beds, tables etc	5
19	Stationery & office equipment	4
8	Tools and hardware	4

The published reports of the design office do not indicate how many of the design holders belong to MSME. A study to estimate the share of MSME should be undertaken. MSMEs are likely to be active in the classes of packages and containers, bakers' products, furnishings, furniture, beds, tools and hardware. It is fair to assume that the class-wise distribution of designs applications in other years would depict a similar picture.

Trademarks

The rise in trademark registration in India indicates that industries have understood the importance of branding and are taking steps towards managing their brands. The trademark data from 2004-05 to 2009-10 shows a regular increase in the number of Indian applicants (Table 12). The average growth in filing of trademark application has been about 16 per cent per year whereas that in the trademarks registered has been about 30 per cent up to 2008-09. The situation in trademark filings is different from that of patents in the sense that there are more trademarks filings by Indians than by foreigners. It may be clarified that there may not be direct correspondence between the number of applications filed and the number of trademarks registered. Registrations in a given year may be linked to applications filed in the previous years as the trademark office has to give time to the concerned parties for filing opposition, and attending to opposition may take some time. Hence, as in the years 2005-06 and 2006-07, the trademarks registered in one particular year may be higher than the TM applications filed in that particular year.

Table 12 : Trademark (TM) applications filed, examined and registered

Year	TM filed by Indian applicants	TM filed by foreign applicants	Total TM applications filed	TM examined	TM registered
2004-05	63906	15090	78996	72091	45015
2005-06	73308	12361	85669	77500	184325
2006-07	88210	15209	103419	85185	109361
2007-08	117014	6500	123514	63605	100857
2008-09	119371	10801	130172	105219	102257
2009-10	134403	7540	141943	25875	67490

There are 45 classes for trademark registration in India including services classes which were introduced in 2005-06. Class-wise registration for the last seven years is given in Appendix 2. It can also be noted that the share of marks for services has gone up which perhaps is in tune with the larger share of the services sector in the GDP. An analysis of the share of each class based on the trademark applications filed during the year 2009-10 indicates that the highest share of 15.8 per cent belonged to medicinal, pharmaceuticals products etc. (Class 5).

Table 13 below lists some of the classes enjoying higher shares. A similar trend was also seen in the earlier years. How many of the TM holders belong to MSME cannot be stated as this information is not available in the published reports of the trademark office. A study to estimate the share of MSME should be undertaken.

Table 13 : Share of TM classes in TM applications filed in 2009-10

Class	Description of class	Number	Per cent share
5	Medicinal, pharmaceutical products etc.	22474	15.8
42	Foods and drinks, beauty care services, legal services etc	9556	6.7
35	Advertising, business management	7751	5.4
41	Education etc.	7241	5.1
9	Scientific nautical and electrical apparatus	7340	5.1
30	Coffee, tea etc.	7045	4.9
25	Clothing	6232	4.3
3	Perfumery etc.	4787	3.3
16	Paper and paper products etc.	4455	3.1
7	Machine and machine parts	3550	2.5

Globalization has motivated many industries to seek trademarks in other countries; one example of this is the growth of trademarks registered in USA by Indian industries.

Table 14 : Trademark applications by Indian residents at USPTO

Year	No. of Trademark applications
2004	260
2005	275
2006	346
2007	412
2008	697
2009	461
2010	645

(Source: USPTO Annual report 2010) [http://www.uspto.gov/about/stratplan/ar/2010/oai_06_wlt_21.html]

It certainly shows that some companies do understand the importance of registering their trademarks in countries where they have their markets.

Geographical Indications

Geographical Indications (GI) have been received quite well in the country after the Geographical Indications of Goods (Registration & Protection) Act 1999 came into force. Applicants seeking GI are government agencies, industry associations, and group of enterprises. In the initial days the thrust to this initiative of getting GI registered was provided by State governments, which was followed by industry and trade bodies. One of the early interventions was by the State of Himachal Pradesh in getting a GI registered for Kulu Shawl.

There has been a reasonable growth in the registration of GIs in India. Table 15 below captures the number of GI applications filed and registered. Further, it may be noted that most of GIs have been registered by or on behalf of MSME.

Table 15 : GI applications filed and registered

Year	GIs filed	GIs registered
2004-05	29	3
2005-06	16	24
2006-07	33	3
2007-08	37	31
2008-09	44	45
2009-10	40	14

(Source: Official Journals of CGPDTG in respect of GI)

The Office of Development Commissioner for Handlooms under the Marketing and Export Promotion Scheme provides financial assistance to register GI in respect of handloom products. The incentive programme was started in 2007 where financial assistance Rs.0.15 million per product is provided. So far, financial assistance has been provided to 32 products.(Source: Annual Report of the Ministry of Textiles, 2008-09).

Other marks

Some other marks as indicator of quality have been used in India for quite some time. The first of this kind is ‘Agmark’, an acronym for Agricultural Marketing, and is a quality certification mark provided by the Government of India. This certification confirms the quality control and the best hygienic conditions for production of food items.

The other mark of most recent origin is the “Handloom Mark” introduced by the Ministry of Textiles. The emphasis has been laid on Brand Development through Handloom Mark during the XI Five Year Plan. The Handloom Mark was launched by the Honourable Prime Minister of India on 28th June, 2006. The purpose of Handloom Mark is to serve as a guarantee to the buyer that the handloom product being purchased is a genuine hand woven product and not a power loom or mill made product. Also, in the new Foreign Trade Policy, incentives to handloom products bearing Handloom Mark have been provided. Handloom Mark is being promoted and popularized through advertisements in newspapers and magazines, electronic media, syndicated articles, fashion shows, films etc. The Handloom Mark label is sold to entrepreneurs at Rs 0.60. This price used to be Rs. 1.25 sometime back. An entrepreneur is required to apply for the handloom mark and the application forms are available free of cost. The registration fee for individual weavers is reduced to Rs.25 from Rs.100 and for Master weavers to Rs.500 from Rs.2000. These marks can be used by an enterprise along with its trademark. Handloom mark and Agmark are certification marks owned by the Government of India in the sense that no one can issue these marks.

1.6 GDP and growth in filings by Indians

The relationship between GDP and IPR has always been a topic of interest. It is observed that with the increase in GDP in the last four years, the filings of patent, design and trademarks applications by Indians have also increased. Table 16 below and the following Figure 4, Figure 5 and Figure 6 show clearly the trend and an interesting relationship between GDP

and patent filing, GDP and design applications filing and GDP and trademarks filings. The increase in IPR applications filing is from 2006-07 to 2009-10, a period after India became totally TRIPS compliant after introducing the product patent regime in the areas of chemicals, drugs and food items. As brought out later in the report, MSME tend to have a good share in trademarks and design filings.

Table 16 : GDP and Filings

Year	GDP in Rs 106 million	Patent Applications	Trademark Applications	Design Applications
2006-07	35.6	5314	88210	3584
2007-08	39.0	6040	117014	3873
2008-09	41.6	6161	119371	4308
2009-10	45.1	7044	134403	4267

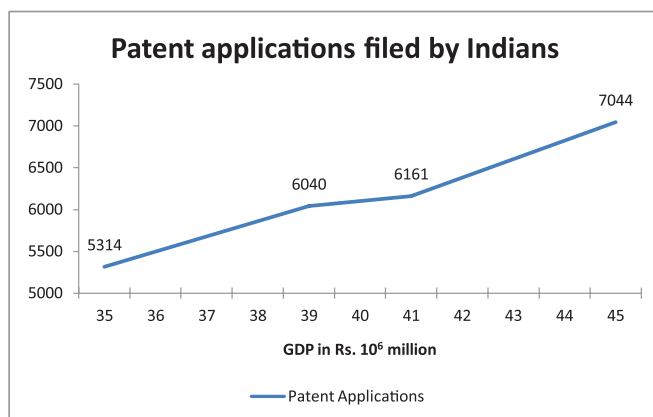


Figure 4 : GDP and patent applications

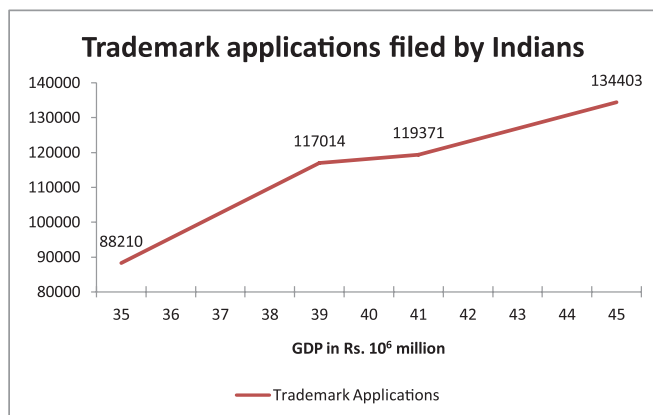


Figure 5 : GDP and trademark applications

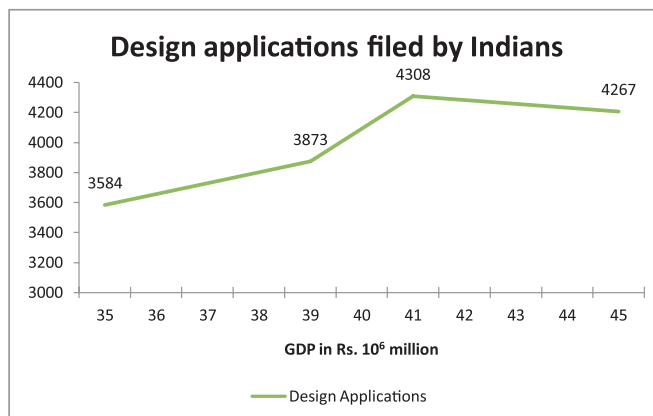


Figure 6 : GDP and design applications

1.7 Human resources

Quality human resources are needed for generating, protecting, maintaining and managing IPR for the growth of trade and commerce. They are urgently required for helping the MSME in the country. The development of human resources in India in the area of IPR really started after India became a member of WTO and TRIPS. In the earlier days it was a subject matter for law students only to learn during their graduate studies with IPR largely being an optional subject. Some selected law firms that specialized in various aspects of IPR have been there for a long time. However, their growth was constrained for want of IPR related business in the country and trained human resources especially in the area of patents. Most law firms practiced in trademarks, designs and copyrights. Multinational companies were known to have their IP departments and they carried out on the job training for their staff. Some public sector undertakings and research institutions engaged themselves in patenting activities but knowledge of IPR was quite limited within these organizations. Some Indian companies, mainly the drug companies, had also developed expertise in the area. Wide scale availability of people trained in IPR and associated matters was low.

The human resource development in India has been taking place at different levels which has led to increased availability of IPR professionals in the country. At the first step, IPR awareness workshops, usually of one day duration, have been conducted all over the country by many Central Government departments and ministries, State governments, and also agencies of government and industry associations, on a regular basis. These workshops generally succeeded in developing some understanding / appreciation about IPR. These were supplemented by short and long term training programmes, training of trainers and training of government officials from time to time, very often with the help of WIPO. These efforts are continuing and India now has many law schools, engineering institutions, universities offering regular courses on IPR. A number of distance learning programmes are also offered by some institutions.

The impact of such workshops on academic and research institutions has been visible and noteworthy. Researchers from such institutions have started using patent information as an input to identifying their research problems and licensing of research results. In this process of research, a significant number of PhD scholars and other junior researchers are getting trained in understanding the role and importance of IPR in research and development. Further, in many institutions the number of patents applied for or granted has become an integral parameter for evaluating the annual performance of their staff members.

Many law colleges have also started teaching IPR as a compulsory subject in their undergraduate programmes. Furthermore, a Master Degree in IPR is awarded in some law colleges. Masters level programmes in biotechnology in universities are encouraged to have a compulsory course on bioethics and IPR. Some universities and technical institutions also offer elective courses on IPR for their students. Indian Institutes of Technology (IIT) also conduct courses in IPR. The non-availability of the required number of teachers with adequate training and working experience in IPR is however a major limiting factor in meeting the needs of the country.

There are distance learning programmes in IPR offered by some educational institutions. Prominent among them are Indira Gandhi National Open University (IGNOU), Indian Law Institute, New Delhi, National Academy of Legal Studies and Research, Hyderabad and National Law University, Bangalore. The programme at IGNOU was initially started in consultation with WIPO.

There are 20 IPR Chairs created by the Ministry of Human Resource Development in as many universities. These IPR Chairs are responsible for conducting courses and research in the area of IPR, including enrolling students for doctoral programmes. They are also expected to conduct awareness programmes and conferences.

The office of CGPDTG conducts examinations for patent agents every year and as a result the stock of patent agents has been increasing. Recently, some innovations have been made in the examination system to encourage candidates to develop understanding about the different dimensions of patents. However, the focus remains on the Indian Patent Act and Rules. As practical experience is not an essential requirement to be a patent agent, many of them may not be useful to companies immediately after becoming patent agents. However, their services are utilized by law firms dealing with patents. Similarly, examination for trademarks agents is also conducted every year and these agents are authorized to represent their clients in the office of CGPDTG during the prosecution phase and subsequent phases. The services of the agents can be utilised by Ministry of MSME at a much lower cost after imparting some training to them under its programme. The National Institute of Intellectual Property Management under the CGPDTG conducts training programmes for newly appointed patent examiners and runs short term training courses in IPR, particularly in the area of patents on regular basis in its campus in Nagpur.

Rajiv Gandhi School of Intellectual Property Laws, situated in the Indian Institute of Technology, Kharagpur, awards the degree of Bachelor of Law in IPR. This is a three - year programme for engineering graduates. It can be seen that a student spends seven years in academics before obtaining this degree; making it longer than the time needed for getting a master degree in engineering. The admission to this course is through an All India Examination and the course has been well received by various stakeholders. A few batches of students have come out of this programme. This is the only programme in India which produces IPR professionals with engineering background for the industry with IPR expertise.

The Department of Science and Technology started some programmes to attract women scientists, who have been away from practising science, back to mainstream science and technology by awarding them scholarships in a competitive mode. One of the schemes is to train them in the field of IPR through a one year training programme. The programme is conducted by Patent Facilitating Centre (PFC) under the Technology Information, Forecasting and Assessment Council (TIFAC) and consists of an intensive orientation programme of six weeks for giving them a reasonable exposure in various aspects of IPR. This is followed by about 10 months on the job training with attorneys' firms, industries and government agencies dealing with IPR on a day to day basis. Six batches have passed out and about 320 women scientists with domain knowledge in their areas have been trained in the field of IPR.

There are now some private initiatives to train professionals in IPR through short term and long term diploma and executive programmes in IPR.

Industry associations such as Confederation of Indian Industry (CII), Federation of Indian Chambers of Commerce and Industry (FICCI) and Associated Chambers of Commerce and Industry of India (ASSOCHAM) have been conducting training programmes for a long time now.

The impact of such diverse endeavours has been very good awareness about IPR across the country. However skilled manpower readily employable by industries continues to be a major bottleneck and the supply of human resources is falling short of meeting industry's needs. Industry requires people having specialized knowledge within the broad area of patents and such people are not readily available. The industry has not articulated their needs effectively to people who are engaged in training. It has been experienced that the knowledge about patent searches and freedom to operate analysis needs to be enhanced considerably in the country to ensure good patentability analysis of inventions. These constraints are more acute in the case of MSMEs with their limited resources of finance, manpower, systems and knowledge. A large pool of professionals will be required for advising and guiding MSME regarding management of their IPR because they cannot afford an independent IPR cell; this pool is presently not available. Considering the large number of MSME and MSME clusters in the country, a good number of IPR consultants and professionals are needed to meet the long term requirements of MSME.

1.8 Overview of policies for innovation

Innovations are much more than inventions in the sense that inventions need to be converted into innovations (marketable products) through a combination of various interdisciplinary actions building the process of innovation. Therefore, the vectorial (synergistic) sum of an invention and many other parameters such as manufacturing, financing, standards etc. leads to an innovation. Innovations are results of complex processes not necessarily linked to science and technology. The basic policy framework, in the first two and half decades after Independence, encouraged import substitution, self-reliance, capacity building and development of local industries. One of the beliefs was that import of technologies and practising them would help in building necessary capabilities for engaging in inventions and innovations and succeed in delivering cost effective solutions. However, this assumption was not proved correct at the ground level in the context of market relevant products. A robust system of funding R&D in the country especially through extramural funding started taking strong roots since early 1970s. Today the country is investing a reasonable amount in R&D. India spends about 0.8% of its GDP on R&D; with almost 80% contribution coming from the government. Promoting R&D in the country has been the unchanging pillar of the policy framework for national development. Most of the time, in the spirit of academic pursuit, researchers were engaged in sharing their knowledge with the world through publications. Most researchers were ignorant about IPR and their importance to R&D and commercialization of R&D results. This situation was prevalent throughout the country and across all sectors, institutions and government departments.

Organizations like CSIR, IIT Delhi, and some industries had their IPR policies before India became a member of WTO. These policies discussed the management of IP generated within the organization, including protection, maintenance, licensing and sharing of revenue generated out of licensing between the institute and inventors. However, the beginning of IPR culture got an impetus only after India became a member of WTO. It is in the National Science and Technology Policy, 2003 that for the first time, an emphasis was given to the management of IPR in all science and technology programmes.

There is no unified innovation policy in the country and serious considerations are being given for evolving a national IPR strategy. At present many different policies are being followed aimed at enhancing inventions and inventive work for finding solutions to the needs of the country. A National Innovation Council has also been established to integrate efforts in this important area. Many initiatives have been taken in the last 17 years to propel the IPR culture forward and establish a sound framework of IPR practices.

Drive towards awareness creation about IPR

The Government of India has been very actively promoting and supporting creation of awareness about IPR among all possible players in the country ranging from academics, government, industries, research institutions and NGOs. This theme has been followed by many government agencies such as the Ministries of Science and Technology, Communication and Information Technology, Commerce and Industry, Human Resource Development, Micro, Small and Medium Enterprises; as also by industry associations and academic and research institutions. The Ministry of Commerce and Industry which is the nodal ministry for policy formulation, law making and granting rights in respect of inventions (patents), designs, trademarks and geographical indications has taken all the initial steps in conducting awareness programmes, seminars and conferences in this field with the help of experts from India and WIPO.

The Department of Science and Technology took a major initiative by setting up the PFC in 1995 for creating awareness about IPR among scientists and policy makers, extending technical and financial help for protecting the inventive work of Indian scientists, and promoting the culture of

using patent information in research and development. PFC has since then organized more than 400 workshops and training programmes on IPR across the country. Keeping in view the large size of the country and the need to have facilitating systems spread over the country, more than twenty Patent Information Centres (PICs) have been set up in as many States to address the local needs of IPR.

As a result of this initiative, many State governments have provided a separate budget line for IPR activities in their annual budgets. The PFC model has been followed by many government departments for creating awareness and providing support for IPR activities. PICs have now become the focal point in the State governments for dealing with IPR matters. The financial and technical support provided to the Indian universities for protecting their innovative work has been successful and PFC has filed more than 500 patent applications so far on behalf of educational and research institutions. The technical assistance includes patentability analysis using patent searches, choice of jurisdiction, prosecution, consultations with lawyers and related activities. The financial assistance includes payment of all expenses towards protecting an IP, and maintaining it in the case of patents, including lawyers' fees and official fees.

A World Bank team while studying the innovation system in India had the following to say about the PFC. "India could consider reducing domestic filing fees for individual and SME by subsidizing them on needs basis. This could be a focus of expanded support to the PFC of TIFAC. In addition the centre or a new patent management corporation, operated as a public-private partnership should provide practical strategic and down to earth IP advice to firms especially SMEs and grassroots innovators in optimizing their patent strategies for innovations." (Unleashing India's Innovations, Mark A. Dutz, World Bank 2007).

The Ministry of Human Resource Development has been supporting awareness programmes for many years now and funds are provided to government agencies, academic institutions and NGO for conducting such programmes. It has also been conducting specialized workshops for developing course material on IPR for teaching in universities.

IPR awareness programmes are conducted by the office of CGPDTG from time to time at different locations in addition to their training programmes at the National Institute of Intellectual Property Management in Nagpur. The office also conducts sensitization programmes on protection of Geographical Indications.

The Ministry of MSME has launched a major initiative for supporting awareness workshops, short and long term training programmes on IPR for the benefit of MSME all over the country. Various schemes of the ministry are explained in detail elsewhere in this report.

The Ministry of Telecommunication and Information Technology through its Department of Electronics and Information Technology has been organizing awareness and training programmes on IPR with a focus on electronics and ICT. In the process, it has taken academic and research institutions and industries on board.

Industries have contributed significantly in awareness creation through their various associations. The prominent ones among them are CII, FICCI and ASSOCHAM. They have been engaged in this exercise for many years. Many of these programmes are held with the financial support from the Government of India. Some of the Intellectual Property Facilitation Centres (IPFC) have been set up by CII and FICCI with the financial support from Ministry of MSME for creating awareness among MSME and extending support to the industry for protecting their IPR.

Some associations of MSME have also been organizing awareness programmes for MSME in different parts of the country. This effort is being supplemented by other IPFC set up at State S&T departments.

Scientific agencies such as CSIR, ICAR and ICMR have been conducting awareness and higher level programmes for their scientists and policy makers. This effort has brought in a cultural change and led to increase in IPR activities in these organizations especially in terms of patent filing.

Institutional IPR policies

Many educational institutions and public sector companies too have developed their IPR policies. Institutions like IITs, Indian Institute of Science, Council of Scientific and Industrial Research (CSIR), Indian Council of Medical Research (ICMR), Indian Council of Agriculture Research (ICAR) and many others have their own IPR policies. IIT Delhi set up a Foundation for Innovation and Technology Transfer (FITT) about 20 years back which is responsible for obtaining IPR on the research conducted in the institute, maintaining and licensing them. The implementation of IP policies in educational institutions has been facing some difficulties. Firstly, there is a shortage of funds for filing applications and maintaining them in and outside India. Secondly, most of the institutions are yet to develop sound systems for handling IPR issues including filing, prosecution and licensing due to lack of qualified human resources. In the absence of a proper office for handling such matters, the maintenance of granted patents would need to be kept in sharp focus particularly by academic institutions. Although most of the institutions are publicly funded, yet their policies may be found at variance. It is also important to note that R&D funding to these institutions comes from the government but the policies regarding ownership of IPR emerging from such funding are not yet unified.

Many public sector industries such as Bharat Heavy Electricals Limited, Indian Oil Corporation, and Steel Authority of India Limited have their sound IPR policies for taking their innovative work forward and organizing innovation processes within the company. Many other public sector undertakings are likely to follow suit.

Policy for IPR sharing

The question of enhancing the spirit of innovation among scientists was thought to be closely related to incentives available to research scientists whenever they create an invention which is licensed subsequently at a price. This issue was addressed for the first time in India by the Ministry of Science and Technology. Its guidelines issued in March 2000 “Instructions for Technology Transfer and Intellectual Property Rights” help in enhancing the motivation of scientists, research institutions and universities in projects funded by the Ministry of Science and Technology. The salient features of the guidelines are (1) institutions may retain ownership of IPR, (2) the owner institution is permitted to retain the benefits and earnings generated out of the IPR, (3) in joint projects with industry, IPR can be owned jointly, (4) the revenue will be shared with researchers and (5) government will have a march in right for a royalty free license.

This was a major departure in the approach and policy towards managing inventions in India by the Ministry of Science and Technology. In order to have a uniform policy of the government in this respect, it may be useful to have a suitable law in this regard. It is obvious that with more and more autonomy to research institutions in regard to IPR and technology transfer, these institutions can work closely with SME and other industries and find solutions to their problems. As there is little interaction between MSMEs and academic institutions presently, these enterprises are not able to access new knowledge. Mechanisms will have to be evolved for building up this linkage.

Science and Technology Policy 2003

The Science and Technology (S&T) Policy released for the first time by the Government of India in 2003 is upbeat on intellectual property rights and related issues. It focuses a great deal on the

transformation of new ideas into commercial successes, which is considered vitally important to the nation's ability to achieve high economic growth and global competitiveness. Accordingly, the policy gives special emphasis not only to R&D and the technological factors of innovations but also to the other equally important social, institutional and market factors. Value addition and creation of wealth through reassessment, redistribution and repositioning of intellectual, capital and material resource is expected to be achieved through effective use of science and technology.

The Policy states that IPR has 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 protection of competitive intellectual property from Indian R&D programmes will be encouraged and promoted. The process of globalization is leading to situations where collective knowledge of societies normally used for common good is converted to a proprietary knowledge for the commercial profit of a few. Action would be taken to protect our indigenous knowledge systems, primarily through national policies, supplemented by supportive international action. For this purpose, IPR systems which specially protect scientific discoveries and technological innovations arising out of such traditional knowledge will be designed and implemented. Our legislation with regard to patents, copyrights and other forms of intellectual property rights would ensure that maximum incentives are provided to individual inventors, and to our scientific and technological community, to undertake large scale and rapid commercialization, at home and abroad.

The development of skills and competence to manage IPR and leveraging its influence will be given a major thrust. This area calls for significant technological insights and legal expertise and would be handled differently, and with high priority. Efforts would be made for synergy between industries and scientific research, by creating Autonomous Technology Transfer Organizations as associate organizations of universities and national laboratories to facilitate the transfer to industry, of know how generated.

The above action strategy has emerged from the following policy objectives: to encourage research and innovation in areas of relevance for the economy and society, particularly by promoting close and productive interaction between private and public institutions in science and technology; to establish an intellectual property rights regime which maximizes the incentives for 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 be maximal in the public interest and to promote international science and technology cooperation towards achieving the goals of national development and security, and make it a key element of our international relations.

Tax incentives

The government has been providing a number of incentives to industries for spending time, money and other resources in R&D and creating legally protectable IP. Some of these are explained below. All the incentives mentioned below have been taken from 'Research and Development in Industry: An Overview; November 2007, Department of Scientific and Industrial Research, Government of India'.

1. Excise duty waiver on patented products

All goods falling under the Schedule to the Central Excise Tariff 1985 are exempt from excise duty for a period of 3 years from the date of commencement of commercial production provided such goods are manufactured by a wholly owned Indian company and such goods are designed and developed by such Indian company and the goods so designed are

patented in any two countries outside India namely, USA, Japan and any country of the European Union.

2. Exemption from Drug Price Control Order

Bulk drugs based on indigenous R&D are exempt from drug price control for a period of 5 years from the date of commencement of commercial production provided that they are produced from the basic stage by a process of manufacture developed by the unit through its own R&D efforts.

3. Weighted tax deduction on R&D expenditure

Weighted tax deduction @ 150 per cent on R&D expenditure is available to companies engaged in the business of biotechnology, or the business of manufacture or production of drugs, pharmaceuticals, electronic equipment, computers, telecommunication equipment, chemicals and manufacture of aircraft and helicopters.

4. Accelerated depreciation allowance

Depreciation allowance at a higher rate is available in respect of plant and machinery installed for manufacturing goods based on indigenous technology developed in recognized in-house R&D units, Government R&D institutions, national laboratories and Scientific and Industrial Research Organizations (SIRO). The present rate of depreciation for plant and machinery is 40 per cent as against 25 per cent for other plants and machinery.

6. Income tax relief on R&D expenditure

Under Section 35(1)(i) of the Income Tax Act 1961, the revenue expenditure on scientific research, by recognized R&D units, on activities related to the business of the company is allowed full deduction. Under Section 35(1)(iv) expenses of capital nature could be deducted totally from the income of the year in which the expenses have been incurred.

7. Tax deduction for sponsoring research

Section 35(2AA) of the IT Act 1961 provides for a weighted tax deduction of 125 per cent for expenses on sponsoring research programmes at national laboratories functioning under ICAR, CSIR, ICMR, Department of Biotechnology, Department of Atomic Energy, Department of Electronics; IIT and universities.

There are hardly any reported cases in the first two categories related to the use of patents and indigenous technologies. The industry has been taking advantage of the other schemes such as weighted tax deduction. Excise duty exemption is a big advantage for getting a competitive advantage yet the industries have not taken full advantage of the same. However, the condition of obtaining foreign patents is quite impractical for MSMEs as they may not like to invest resources for obtaining foreign patents. It is likely that industries may not be aware of the schemes as the government has not created awareness about the subject area. At the same time the enterprises may lack the expertise of coming up with patentable inventions and putting them into production.

Programme for capturing grassroots' innovations

There have been many constructive and useful efforts in capturing inventions and innovations at different levels through well-defined programmes of the Government of India. Technology Entrepreneur Promotion Programme (TePP) was initiated in 1998-99 to extend financial support to individual

innovators for converting their innovative ideas into working prototypes / models and is operated by the Ministry of Science and Technology. National Innovation Foundation (NIF) was set up in 2000 by the Ministry of Science and Technology, Department of Science and Technology to scout for grassroots innovations, prepare a depository of such innovations and help these innovations reach the market. This was a government initiative to take, to a higher level and with institutional support, the excellent work done by the Honey Bee Network and Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI), both of which were NGO initiatives. NIF has been doing pioneering work in this direction and this policy level intervention by the government is quite unique. In order to capture inventive ideas at a basic level of school, children are encouraged to participate in exhibitions jointly organized by Ministry of Science and Technology, CII and other partners like Intel etc. This has become a regular feature every year and participation has been on the rise.

Technology Business Incubators (TBI)

Business incubators originated in the US. The origin of the idea can be traced to 1942 when Student Agencies Inc. began incubating student companies. In 1946 the first incubator outside the student community was started by the American Research Development (ARD), started by several MIT alumni to supply risk capital to entrepreneurs. The growth accelerated in the 1970s and 1980s largely as a result of the need to revitalize regions suffering with job losses in basic industries. In 2006, North America had 1400 incubators, up from 12 in 1980. By 2007, UK had around 270 incubation environments. In EU about 900 incubator environments were identified in 2002.

Similar efforts were made in India by the National Science and Technology Entrepreneurship Development Board (NSTEDB) established in 1982 by the GOI, Department of Science and Technology, which is an institutional mechanism for promoting knowledge driven and technology intensive enterprises. The primary objective is to promote and develop high-end entrepreneurship for S & T manpower as well as self-employment by utilizing S & T infrastructure and by using scientific methods.

Technology Business Incubators (TBI) are a step forward to the earlier known business incubators (BI) and technology incubators (TI). BI aims at promoting continuous regional and national industrial and economic growth including increasing employment through general business development or stimulating specific economic objectives such as industrial restructuring, wealth generation or utilization of resources. An incubator combines a variety of small enterprise support elements in one integrated affordable package. It has a special niche i.e. nurturing early stage, growth oriented ventures. TIs are intended to bolster the technology developing stage. The primary goal is to promote the development of technology based firms and assist in completion of technologies under development. TBI have a much larger role as TBIs are a venture of universities, public research institutions, local government and private institutions to promote and bolster a new technology intensive enterprise. The focus group consists of innovative, mostly technology oriented or knowledge driven service sector enterprises and the group interacts with academics from time to time.

The objectives of TBI launched in India in early 2000 include creation of technology based new enterprises and value added jobs and services, facilitating technology transfer, speedy commercialization of R & D output, and specialized services to existing MSME. TBIs are located around R & D institutions / academic institutions or with organizations having strong links with such institutions to ensure optional use of this already existing expertise or facilities to keep the cost of TBI low. Most institutes are selected on the basis of their R & D infrastructure and track record. TBI provide many facilities such as modern work place, communication facility, computing facilities, vital equipment, library, training & conference facilities. TBI also provide specialized services to existing SMEs in the regions to facilitate technology commercialization, consultancy, training including short courses, technology related IPR issues, legal and quality assurance, marketing, assistance in obtaining

clearances, common facilities, assistance in preparation of business plan, technology shows/clinics/trade fair.

Thrust areas covered by TBI are ICT, application of biotechnology, new materials including nano materials, instrumentations and maintenance, agriculture and allied fields, garments and fashion technology, and services. There were 10 incubators in 2000 and the number has grown to 30 in 2009. A list of TBI is given in Appendix 3. The incubates are from the fields of ICT, electronics, mechanical/manufacturing engineering, biotechnology/ pharma, agriculture and agri-biotech. The First Status Report on Technology Business Incubators in India, 2009 states that 495 ventures successfully graduated from incubators, of which about 387 continue to remain in business. Through them 10,709 jobs were created and a revenue of about Rs 3730 million was generated in one year. Most of the incubates are from the area of ICT and electronics followed by biotech (both pharma and agri-biotech), mechanical engineering and others. (First Status Report on Technology Business Incubators in India 2009; Department of Science and Technology, Government of India). Further, based on available information most of them will fall in the category of MSME.

Mr Harkesh Mittal, Head of the National Science & Technology Entrepreneurship Development Board (NSTEDB) , which is responsible for promoting Technology Business Incubators stated that the success rate in terms of number of startups, was fairly good but the growth and scaling up of startups was limited as a large number of these startups are not able to expand with time. Out of the many reasons cited for slow growth, the important ones were lack of high quality mentors, lack of funds required for growth such as the absence of venture capital and private equity funds and a hesitation on the part of the entrepreneur that the control of the company may slip out of the hands of the owner combined with low aspiration levels to grow. Further, due to lack of teachers/ consultants and good attorneys of IPR, TBIs face a challenge to impart good technical and commercial exposure to IPR.

Ministry of MSME also launched a scheme on incubators in 2008. It aims at providing assistance up to Rs 0.65 million to each incubatee primarily for business development. Presently, TBI set up by DST are being utilized for the beneficiaries under the scheme of the MSME ministry. So far 260 incubatee ideas and 76 business incubates have been supported. The government has recently announced that TBIs will be exempt from service tax for providing services to incubates.

Awards

There are many awards given for generating IPR, R&D and developing technology packages based on R&D. The Ministry of Commerce and Industry has been presenting awards to IPR owners having large IPR holdings in terms of patents, trademarks and designs and having a record of apportioning funds for R&D, IPR policy, licensing of IP, contribution to society and so on. These awards are given in four categories namely, large industry, MSME, academic and research institution and grassroots innovators. The Ministry of MSME presents annual awards to those MSME which have obtained excellent results in their R&D efforts through spending in R&D and developing products based on the results. Awards to large industries and SME are also given for developing technology packages based on indigenous R&D by the Technology Development Board.

In the last 15 years, the IPR regime in India has been established on firm ground, in terms of laws, human resources, training and management of IPR. The impact of this new paradigm needs to be seen in the right perspective. It can be seen from the IPR statistics that filing of patent, trademark and design applications by Indians has gone up and so has the number of applications filed by foreigners. Alongside filing and obtaining IPR, management skills and strategies to leverage IPR for commercial advantage and benefits have also grown especially in pharmaceutical sector. Industries need to understand that IPR can bring in long term benefits in terms of competitive edge, generation of additional revenue, exclusivity, leadership and so on. All other forms of IPR such as copyrights, trade secrets etc. play an equally important role. It has been clearly shown that the numbers of filings in electronics / computers and drugs and biotechnology (BT) have grown faster than other areas. Therefore, the obvious choice of industries to study would be drugs and information technology (IT).

Both these areas are growing rapidly and are facing tremendous global challenges in terms of competition, and therefore are looking for long term sustainability and market share. IPR remains one of the key parameters in moving forward. In the context of IPR, these two industries are distinct from each other in many respects. The drug industry is quite an old industry in India and is a result of the vision of some individuals and the investment of the government in R&D and higher education. Setting up of a few drug manufacturing companies by the government became a training ground for many scientists who became resources for the drug industry in general. The spirit of entrepreneurship was at the centre of all development. Today, the Indian drug industry is competing at the international level. The industry has developed expertise in IPR matters especially in relation to generic drugs. The IT industry on the other hand is of a recent origin and has really emerged from successfully handling projects from outside the country. Most of the initial work was on contract basis and the industry had no real scope of generating and protecting its own IPR. Instances have been seen where the contractual conditions also did not allow owning of IPR. Secondly, awareness about IPR in this industry was not good during the early days and it did not understand the benefits that IPR could bring to the industry. Thirdly, initially there were only limited trained human resources available for generating protectable IP. It is well known that Indian companies have taken massive initiatives and steps for training highly educated people in the IT sector.

2.1 Drugs and pharmaceuticals

No study is available which has focused on the impact of the new IPR regime in India on the drugs and IT industries. A UNDP study (Five Years into the Product Patent Regime: India's Response, Sudip Chaudhuri, Chan Park and K. M. Gopakumar, UNDP, December 2010) has analysed the Indian drugs industry in the post 2005 era. It may be noted that India introduced the product patent regime for drugs, chemicals and food items in 2005. The study has discussed IPR issues but not in any detail. It has concluded that the growth of the Indian pharmaceutical industry has largely been propelled by the export market rather than the new IPR regime. It may however, be remembered that export to developed countries cannot be successfully achieved without addressing the IPR issues.

The study finds that only a small percentage of drug companies spent substantially in R&D. The Indian pharmaceutical industry is highly export oriented. Significant R&D efforts are directed towards developing processes and products to get regulatory approvals for entry and growth in patent expired generic markets in the developed countries. Thus much of R&D by Indian pharmaceutical companies is not related to TRIPS. It is the result of increasing export orientation of Indian pharmaceutical companies and diversification to the regulated markets, particularly to the US. While for the R&D spenders there has been a significant amount of investment, no new chemical entity (NCE) developed by an Indian company has as yet been approved for marketing in India. For companies that invested

heavily in NCE development there have been significant setbacks to the extent that eventually these companies have had to reduce their R&D expenditure and some have de-merged their NCE R&D business. The study states that the industry has not succeeded in developing NCE as was anticipated by many.

Analyzing the findings, the study concludes that little has changed to dispute the conventional wisdom that developing countries should not grant product patent protection in pharmaceuticals. They are already paying the cost of high prices of patent protected products without having seen the supposed concomitant technological benefits. While R&D activities have diversified, efforts in the full development of NCEs are yet to succeed and are focused on lucrative developed country markets. What Indian companies have really demonstrated is the ability to develop generics - an ability acquired and improved during the pre-TRIPS period. Industry gains are evident in the new relationships with MNCs.

The above report also quotes a report by the Confederation of Indian Pharmaceutical Industries (CIPI) which is a nation level group of small scale pharmaceutical associations in various states, that more than half of the small-scale pharmaceutical units operational in India have either closed down or have indefinitely suspended business activities in the last two years. This is partly because of their inability to withstand competition from larger units in the changed business environment. In the retail formulations market, the smaller units are increasingly finding it difficult to compete with the larger units, which have greater marketing and other resources. All the drug manufacturers have to be compliant with Good Manufacturing Practices (GMP). The smaller companies are finding it difficult to make the necessary investment in infrastructure and systems to meet quality standards. However, they should be able to create proper systems in days to come.

The patent portfolio of the Indian companies has grown very fast in the last 15 years. It may be reckoned that no company will spend money on obtaining patents unless the benefits are visible and, more often than not, ensured. The importance of spending on research and development for being competitive in the domestic and global market has been well understood by this industry. The realization that R&D should lead to generation of patents dawned very quickly and the results are seen in many different ways. Firstly, all leading companies have set up their IPR cells which are constantly engaged in freedom to operate analysis (FTO) and prior art searches to determine novelty and non-obviousness of their inventions and products (like NCEs).

Secondly, generics developed and produced by them have to be ahead of others and are to be free from all IPR road blocks. The evidence of such an approach is visible in the increasing number of new drug applications submitted by these companies to regulatory bodies under foreign jurisdictions such as the Food and Drug Administration, USA. A company must be sure that its invention does not infringe the patent of an existing drug, meaning thereby that the company must have very good knowledge of patents, especially process patents, patent laws of different countries and the implications of an infringement in those countries. Apparently, the cost of infringement in such cases may run into millions of dollars. In the area of generics too, knowledge of patents is essential to avoid infringement and other market risks. Therefore, it is obvious that the Indian drug companies cannot exploit the export market unless they handle their patents properly.

It is also observed that Indian companies are making various responses including filing oppositions to ensure the robust application of India's patent law, exploring voluntary licensing, engaging in patent disputes and resisting the enforcement of greater patent rights in order to restrict the scope of the patented market. The UNDP study has missed out these points. R&D for new drugs or a new process for a known drug and patents are not mutually exclusive. No company will consider development of products or process unless IP issues have been fully taken care of.

Three companies have been studied for the purpose of this report largely from the IPR angle, with the help of patents and trademark data and companies' balance sheets and annual reports. The reason for selecting balance sheets is that these are audited documents and have gone through a process of a third party accreditation. All companies reflect their IP assets in their balance sheets as

a part of fixed assets and therefore these are depreciated over time as per defined norms. In other words the companies carry out a regular valuation of their IP assets indicating the importance being attached to their IPRs in enhancing the value of the company. The selected companies are Dr Reddy's Laboratories, Ranbaxy and Sun Pharmaceuticals.

Dr. Reddy's Laboratories has obtained 83 Indian patents and 283 patent applications have been published. This company has been obtaining patents in other countries as well. Dr Reddys show know-how, patents, and trademarks etc. as a part of intangible assets which in turn is a part of the fixed assets. The know-how assets and other intangible assets may be largely due to in-house development and a small part may be bought out property. It may be noted that know-how generated, for example specialized experimental techniques and methods, may be put to multiple uses. The value of patents, trademarks etc. has been shown as Rs 181 million in 2009-10 as against Rs 76000 in 2002-03 reflecting a huge jump. Ranbaxy has 50 Indian patents and 726 patent applications have been published. This also has many patents in different jurisdictions. The company's valuation of its IPR is shown as fixed assets in its balance sheet. The valuation of its IP assets has moved from Rs 371 million in 2001 to Rs 798 million in 2010. Sun Pharmaceuticals has obtained 53 Indian patents and 162 patent applications have been published after 18 months of filing. This company also has patents in different jurisdictions. (Source: Companies' balance sheets and Indian patent database).

All these companies started as small companies but grew into large ones over years with continuous build-up of their IP assets, not necessarily in terms of patents alone. All of them started with manufacturing of known drugs. These companies have been utilizing their IP assets in an integrated manner. The experience of these companies is an example for SMEs of today.

An analysis of 137 Indian pharmaceutical SME has been done for the purpose of this study. It is presented in detail later on in this study. Briefly speaking, it is estimated that 16 per cent of the Indian pharmaceutical MSME are engaged in patenting activity. These companies have filed patent applications which have been published and may be in the examination stage. However, only 7.3 per cent of them had obtained patents. Most of the patents relate to processes and combinations. The other interesting feature is that a large number of these companies have their own trademarks and others can be easily located on the internet through various sites providing trade information.

2.2 Information Technology

It has been mentioned above that the IT industry is quite different from the pharmaceutical industry when it comes to matters related to IPRs. It may be noted that the growth of IT companies in India has been very rapid in the last 10 to 12 years. Many new companies have grown from the status of start-ups and these have largely been working on outsourced contracts. Most of the TBIs in India are populated by start-ups and small companies in the field of information technology. These companies may license their products to big and medium sized companies or service providers or technology providers. Therefore, one needs to understand the present scenario of patent protection in the sector. Three companies namely, Infosys Technologies (Infosys), Tata Consultancy Services (TCS) and WIPRO were selected and information about their patent portfolio and its role in financial standing has been analyzed. Balance sheets of these companies as produced in their annual reports were also studied. Information about their patent holding in India was determined through the patent database of the Indian Patent office.

A computer program *per se* is not patentable under the Indian Patent Act unless it is embedded in some hardware. It may be mentioned that earlier there was no provision in the India Patent Act to allow patenting of computer programmes and other related matters. At this moment there is no information available as to how many computer programs have been patented. This would need an analysis of the granted patents in this area. The patent filings by Indian IT companies were very low and in some cases non-existent before 2005 when the Patent Act was last amended. At the same time it may be recalled that software is a subject matter of copyrights as well.

The three biggest players IT players in India namely, TCS, Infosys and WIPRO did not file any patent application in India until 2000 as per the Indian patent database. TCS has twenty Indian patents for which patent applications were filed from 2000 onwards. It has 157 applications under examination and most (90 per cent) of these applications were filed from 2005 onwards. Infosys still has no Indian patent to its credit. However, Infosys has filed 185 Indian patent applications from 2005 onwards. WIPRO has only nine applications filed in the Indian patent office. These companies are now exploring patents in other jurisdictions. In addition, the companies have been protecting, in various jurisdictions, their trademarks such as Infosys, Finacle, iEngage, iTransplant, by Infosys Technologies and QUARTZ, Tax Mantra and Bancs by TCS.

The reasons for such late action by the Indian IT companies could be many starting with lack of awareness about patents to understanding about the concepts of patenting, knowledgeable professionals in the organization, freedom to carry out independent research and own IPR while engaged in contracts, and the perception by the management about the significance of IPR. The skill sets to take advantage of IPR are now getting developed and it is expected that the IPR activities in this sector would be much higher after a few years. There is yet another reason about the slow progress and that is to do with the nature of inventions involved in the IT area. These inventions have to deal with abstractions and it is often difficult to fit these abstractions into the physical world while satisfying the criteria of novelty, inventiveness and utility. In other areas of technology the level of abstraction is largely low or missing. Further there are inherent difficulties in assessing novelty and inventiveness of an ICT invention.

Given the above scenario where even the big players did not start filing patent applications until 2000, it is not reasonable to expect smaller companies to enter into protecting their IP. The smaller companies are largely engaged in application development on behalf of their clients and practically have no rights over the IP generated in most cases. In the absence of data regarding copyrights, it is not possible to find out the copyright ownership of these companies. This would be true for bigger companies as well. A patent search was carried on 125 MSME in the IT area and it has been found that not a single company belonging to this set of companies owns an Indian patent; further the number of companies which have filed patent applications is also very low. A more detailed account is available elsewhere in this report.

The large companies have developed the skills of valuing their intangibles including different forms of IPR and the value is shown in their balance sheets as a part of fixed assets. Infosys rated its brand value as Rs 141,530 million in 2005 and it was enhanced to Rs 323,450 million in 2009. Similarly, WIPRO showed its IP value as Rs 354 million in 2005 and Rs. 2744 million in 2010. It is well known that valuation of IP assets help in joint ventures, raising funds from financial institutions and licensing of IP. There is a need for MSME to learn from the larger players and carry out the valuation of their IPR from time to time. The culture of IPR audits is almost a non-existent practice in India and as a result, most companies do not even know what their IPR portfolios are in terms of different types of IPR. It is considered desirable that MSME should be educated to carry out an audit of their IP with the help of external auditors or through an internal audit team.

It can be seen that the Indian drug industry sees the need for generating and protecting its IPR to remain competitive and is found to be active in achieving the goal by generating IP and protecting it and also establishing its presence through appropriate trademarks. The Indian IT industry is a novice in this area, primarily because the IT area is new and the most Indian MSME would be just about a decade old. They have to learn to relate IPR to their business to get the maximum advantage of their knowledge and expertise.

Part III - SME (including microenterprises) and the use of IPR in their competitive strategies

3.1 Background

The Government of India has been developing policies and support systems for micro, small and medium enterprises since the Indian independence.

The first part of this process, which was very long, was towards creating support measures for this important sector of industry. Many policy decisions were taken and put into practice for effectively enhancing employment opportunities, helping equitable distribution of national income and facilitating effective mobilization of private sector resources of capital and skills. Small Industries Development Organization (SIDO) was set up in 1954. SIDO has now been developed into the Micro, Small and Medium Enterprises Development Organization. SIDO was an apex body for sustained and organized growth of this class of industry. The Industrial Policy of 1956, for the first time emphasized the role of small scale industries in the development of national economy. The policy therefore recommended the development of ancillary industries in areas where large industries were to be set up. The thrust of the Industrial Policy statement of December 1977 was on effective promotion of cottage and small industries widely dispersed in rural areas and small towns. The focal point of development of small scale industries was moved away from big cities to the districts. The concept of District Industries Centre was introduced for the first time.

The second part of the process coincided with the opening of the Indian economy starting from 1991 and may be considered to have lasted up to 1999. A new policy for small, tiny and village enterprises was brought out in August 1991 and put in place a revised frame work in the context of liberalization, this essentially aimed at changing the protection ideology to competitiveness thereby infusing vitality and growth. Supportive measures included improvement of infrastructure, technology and quality. Testing centres were created for quality certification and Sub-contracting Exchanges were established. The Small Industries Development Bank of India (SIDBI) and a Technology Development and Modernization fund were created to accelerate financial and technical services to the sector. A Delayed Payment Act was enacted to facilitate prompt payment of dues to MSE.

From 1999 onwards, which may be called the third phase of the continued evolution of policy frame work, focused attention has been paid to development of this sector. The Ministry earlier known as Ministry of Small Scale Industries and Agro & Rural Industries was reorganized and the present Ministry of Micro, Small and Medium Enterprises was created in 1999. A new policy package was announced in August 2000 to address persisting problems relating to credit, infrastructure, technology and marketing. A credit linked Capital Subsidy Scheme and a Credit Guarantee Scheme were launched to encourage technology up-gradation and collateral free loans. The Micro, Small and Medium Enterprises Development Act 2006 (MSMED Act) came into being after extensive consultations with stakeholders. Some noteworthy measures taken by the government through this Act are inclusion of medium enterprises in the overall planning, new definitions for each of the sectors of MSME and a change in the ceiling for Foreign Direct Investment. The Act provides for the first ever legal framework for recognition of the concept of enterprise, which comprises both manufacturing and services.

Encouragement to small industries has been one of the themes of India's industrial policies from time to time right since Independence. Policy measures undertaken by the Central and State governments addressed the basic requirements such as credit, marketing, technology, financial and infrastructural support. Some of the important measures included factory space in industrial estates, ready built shades, credit at concessional rates of interest, making raw material available through quotas and import licenses, reservation of products, differential central excise levies supply of local and imported machinery on hire purchase basis.

Before the enactment of the MSMED Act there was no classification of medium enterprises. As a result when many developed and other countries were using the term SME, India was using the term SSI. By incorporating this classification, the Indian system is aligned with international practices. Further, the inclusion of micro enterprises is aimed at addressing the needs of very small enterprises. Micro enterprises may be equated to tiny enterprises of the earlier days. Enterprises have been classified broadly in two categories namely, manufacturing and services. Both categories have been further divided into three categories, micro, small and medium enterprises based on their investments in plant and machinery for manufacturing enterprises, or on equipment in case of services enterprises.

Table 17 : Investment ceiling for plant and machinery or equipment for classification of enterprises

Classification	Manufacturing enterprises	Service enterprises
Micro	Up to Rs 2.5 million (\$50 thousand)	Up to Rs 1.0 million (\$20 thousand)
Small	Above Rs 2.5 million (\$50 thousands) & up to Rs 50 million (\$1 million)	Above Rs 1.0 million (\$20 thousands) up to Rs 20 million (\$ 0.40 million)
Medium	Above Rs 50 million (\$1 million) up to Rs 100 million (\$ 2 million)	Above Rs 20 million (\$0.40 million) up to Rs 50 million (\$ 1 million)

1 \$ = Rs 50.

It may be reckoned that in many countries the classification is based on the number of employees and not on investment in plant and machinery.

The government has been conducting surveys of MSME sector from time to time. According to the survey done in 2006-07, the number of leading companies in different fields is given below:

Table 18: Industry sector wise distribution of MSME (registered and unregistered)

	Activity	No. of Enterprises
1.	Repair and maintenance household goods	1,21,09,391
2.	Food products and beverages	15,29,629
3.	Wearing apparel	13,07,362
4.	Textiles	10,45,634
5.	Furniture	6,65,489
6.	Wood & wood products	5,48,410
7.	Fabricated metal products	3,19,723
8.	Non-metallic products	2,76,752
9.	Chemicals and chemical products	1,39,752
10.	Machinery and equipment	1,22,245
11.	Leather products	89,290
12.	Electrical machinery	77,356
14.	Basic metal	74,884
15.	Rubber and plastic products	61,106
16.	Paper and paper products	32,999

(Source: Annual Report 2009-10, Ministry of MSME)

The scope of generating patents may not be high in many industries and that should be clearly understood. A clear signal may be seen that many MSME engaged in activities such as repair and maintenance and fabricated metal products, which really do not have much scope for inventing or which do not have resources to carry out research need not be burdened with patenting. However, the other forms of IPR would be significant for them, of course depending on the kind of industry, such as designs, copyrights, trademarks and trade secrets. After all, the goal is to encourage generation of IP and its protection and therefore right attention has to be paid to all forms of IPR.

Apparently, there is no classification for IT, drugs and BT and hence, these sectors have not been covered in the above survey. Drugs and bio-technology may be part of chemicals and chemical products and food products. Considering the higher possibility of inventive activities in the drugs and bio-technology, it would be a good idea to include these sectors in the next survey. Similarly, IT can be included as a new sector in the next survey.

Not all MSME units are registered with the government and this creates difficulty in collecting reliable statistics. According to the Annual Report of the Ministry of MSME 2009-10, the proportion of micro, small and medium enterprises in the registered units, estimated to be 15,52,491, is 95.05 per cent, 4.74 per cent and 0.21 per cent respectively. It is likely that the percentage of small and medium enterprises will go down when all the MSME both registered and unregistered are taken into account because it is expected that a larger number of micro units may presently not be registered. Chances of generation of patents are more in case of small and medium enterprises in conventional industries. An interesting development taking place is that many start-ups and new companies are coming up in the IT area and in some advanced technologies such biotechnology. Many IT companies especially software companies would be micro in nature because they do not need investment in plant and machinery of more than Rs 1.0 million. The same may be true for BT enterprises as well although their limit is Rs. 2.5 million as they would be in the manufacturing sector. That does not mean however that there may not be SMEs in these areas.

Further, 66.67 per cent of all registered units are into manufacturing and 33.33 per cent in the services sector. The percentage share of micro units in manufacturing is 94.16 and that in the services sector is 96.85. The share of medium enterprises is only 0.08 per cent in the service sector. The total number of service enterprises in the medium group is 402 only and in the manufacturing sector is 2828. The number of small units in the manufacturing sector is 67666 and in the services sector 15915. The number of micro units in manufacturing is 9,74,609 and that in the services sector is 5,01,072. Looking at the large number of micro enterprises there is need to develop an IPR strategy for them which need not be patent driven. There is no comprehensive data on the registered units at the national level. Some data exists at the State level but the data is not in a digitized form and hence its usability is highly restricted.

3.2 IPR survey

Information on IPR granted to or registered in the names of Indian MSME is not available anywhere. By using the Indian patent database it may be possible to compile the list of patent grantees but it would be difficult to determine which grantees belong to the MSME sector. The only way to compile this list would be to utilize secondary sources such as internet, financial statements of companies, personal knowledge or information from the patent holders etc. Although many studies have been conducted on MSME in general but no study available in public domain has focused on the aspects of IPR and innovations. A study conducted on the R&D status of SSI sector in India with focus on industries in the State of Karnataka has revealed some interesting findings about innovations in this sector. The study was based on a survey of 250 tiny industries (having investment of up to Rs 2.5 million in plant and machinery) and 716 non tiny industries (having investment of more than Rs 2.5 million and up to Rs 10.0 million in plant and machinery) in Karnataka.

1. Improving quality, reducing costs and meeting customer needs were the major objectives of R&D
2. Incremental innovations formed the striking feature of R&D
3. SSI units which had performed R&D had larger scale of production, higher capital productivity and higher output as compared to other SSI units.
4. Export oriented SSI were engaged in R&D more than others and units having R&D enjoyed better export revenue.
5. 5 units in the non-tiny sector and 3 units in the tiny sector had obtained patents.
6. 75 per cent of the units achieved quality improvement performing R&D; 66 per cent reduced the rate of rejection and more than 50 per cent increased productivity.
7. R&D is performed in-house, generally informally. In the name of outside help, support is taken from relative / friends and consultants.
8. The majority of owners / managers of SSI units in Karnataka were diploma or degree holders.
9. The report states “One of the reasons cited by some of the entrepreneurs for not going for patents is that a patent only provides wide publicity to their innovation achievement but it does not prevent emergence of competition in some form or the other, which they do not want.”

(R&D and Technological Innovations in Small Scale Industries by M H BalaSubrahmanya, Allied Publishers, 2002)

It is clear from the findings that some SSIs have been engaged in innovative work for improvement in quality or reducing costs or cutting down rejections. Many of these actions may not be patentable but would contain a strong component of intellectual property especially in terms of know-how, trade secrets and sometimes tacit knowledge. The interesting question will be to find out if they maintain a proper record of what they have been doing to achieve their market goals.

According to a Chilean study, most innovations by SME in Chile were by way of incremental innovations for reduction in costs and / or improving efficiency. Although companies were exporting their products but they did not obtain any patents. The reasons were several - the high cost of obtaining patents, long time involved in the grant of a patent, not foreseeing many benefits in a globalized economy and that these were only incremental inventions.(Jose O. Maldifasi, “Entrepreneurship and Innovation in Chilean Firms: An Exploratory Study, International Journal of Entrepreneurship and Innovation Management (No 1, 2001))

The similarity in findings of the above two reports is quite interesting and indicates that SME all over, especially in developing countries may have comparable experiences, thought process and mind set. An attempt may be made to bring such countries on a common platform to share their experiences so that global strategies may be worked out toward effective management of the IPR of SME.

The analysis in the present study is based on some surveys carried out during the study period and one survey carried out earlier. It is necessary to understand that the Indian Patent and Trade Mark Office did not have a digitized database on patents, trademarks and designs until about 2005 when a true beginning for digitization was made. The patent data was until then available in paper form in the gazettes issued by Government of India. It was quite cumbersome to extract data from the official gazettes which used to be published every week. All data extraction had to be manual. The gazettes were discontinued in 2004 and then the information started appearing in print in the official journals of the patent office. Initially digital searches were not possible but with the passage of time several changes have been brought about and things started improving. The database is still in the process of development and it is hoped that soon this would be as good as any other database. At present however the patent database is yet to come to a level comparable to similar databases of the developed countries. Therefore it is felt that data published in the gazette till 2004 will have higher reliability.

The first attempt to digitize patent information appearing in the gazettes was made by PFC, Technology Information, Forecasting and Assessment Council (TIFAC) under the Department of Science and Technology, Government of India in 1997-1998. Two CDs were brought out every quarter, one related to applications filed and the other related to patent applications accepted for opposition, these were called Ekaswa A and Ekaswa B respectively. The data from the gazette was manually compiled and converted into digital form. The data published in gazettes from 1995 to 2004 was captured in these CDs. The data is well consolidated and easy to access. For the purposes of the study, Ekaswa B was used to extract information about the patents accepted for opposition, meaning thereby that the related inventions had been examined by the patent office and were found patentable. The patent office had allotted patent numbers to all those cases, indicating that these were as good as granted patents. It may be clarified that accepted patents were open to opposition and the actual grant of patents was subject to payment of fees and no pending opposition. Therefore the accepted patents may not be equal in number with the granted patents. The data on accepted patents truly reflects the inventive activity of patent applicants. It may be pointed out that only a few accepted patents used to be denied due to opposition. Therefore the assumption that the patents accepted for opposition would be equivalent to granted patents, would not affect the present study significantly. The patent, trademark and design databases do not require a mention in the application form, of whether an applicant is an MSME or large industry or an NGO or an academic institution. Therefore, ascertaining the MSME applicants and patent holders from the database requires huge efforts and some assumptions.

Methodology for survey

The following methodology was adopted for the purpose of the survey:-

1. Ekaswa B was used for getting information on patent applicants whose applications have been accepted for grant of patents subject to payment of fees and opposition. The period was from 1995 to 2004.
2. Based on the country of origin, all applicants from outside India were removed. This left only the Indian residents whose applications had been accepted.
3. From the list at 2 above out all those cases where the applicants were individuals were separated. Thus a list of individual applicants was created. The remaining list only had the names of companies, academic institutions, government department and agencies, research organizations and NGOs who had applied for patents and their applications were accepted for grant.
4. From the list at 3 (remaining list) the names of such companies were removed which were considered large based on the knowledge about industries / companies available in open domain, academic institutions, government departments and agencies, and research organizations and NGO. Thus a new list was created having names of likely SSI.
5. Two sets of questionnaire were used one for individual applicants and the other for SSI in the list at 4 above.
6. Questionnaires were sent to all the individual applicants on the addresses given in the gazettes.
7. A sample survey was attempted through a market survey agency to collect data from the selected companies from the list at 4.
8. Attempts were made to get information from technology incubator firms. Similarly, MSME awardees for R&D were also contacted for getting more information.
9. Respondents were also requested to give information on trademarks and designs.
10. Available databases and websites of companies were also studied to generate more information.

Survey of patents granted in the names of individuals owning MSME (1995-2004)

The reason for selecting individual applicants was based on the assumption that small industries were largely proprietorship companies and some owners may have been inclined to file applications in their names. The assumption turned out to be partly correct once the filled up questionnaires were received. The only survey in this respect available is the one carried out by the Patent Facilitating Centre, TIFAC, under the Department of Science and Technology, Government of India in 2009-10. The basic data was obtained from Ekaswa B. The survey, which is unpublished, was undertaken when the author was the Director of PFC during 2009-10. Permission has been taken from TIFAC to utilise the survey data for this report.

The questionnaire at Appendix 4 was sent to individual inventors. As can be seen, the questionnaire sought limited information from the inventors. It sought information about the status of the company if the individual concerned had an industry, patents granted from 1995 to 2004 and after 2004, trademarks and designs registered and utilization of patents. It may be noted that the questionnaire also attempted to capture data on patents obtained by these individuals after 2004 as well. Further, information on trademarks and designs was also sought. Special attention was paid to keep the questionnaire simple and short to encourage the inventors to send a reply.

A total of 1658 records were located falling in the category of accepted patents in respect of 1000 individuals. PFC had sent these questionnaires to about 880 innovators on the addresses given in the gazettes as 120 addresses were found to be incomplete. Only one questionnaire was sent to individuals even if they had more than one application accepted for grant for patents. About 300 letters came back as such with the remarks like person left, not available or wrong address. Out of remaining 580 letters, PFC received response from 136 respondents.

The responses obtained in the survey have been taken along with the findings and a further analysis now done. It is seen that 68 of the 136 respondents own their small scale industries. Two respondents did not give complete information and therefore are not included in the study. Thus it may be safe to infer that about 48.5 per cent applicants in the category of individuals had their SSIs. These 66 individuals had 174 patents granted to them from 1995. Thirty five of 174 applications were accepted for grant after 2004, hence the number of applications in respect of these individuals accepted for grant subject to payment of fees and no opposition pending was 139 during the selected period. It is inferred that each of the 66 individuals on average were granted over two patents i.e., 2.106 patents per individual.

Based on the finding that 48.5 per cent applicants had their SSI units, it may be estimated that out of 1000 individuals having patents, 485 would have SSI units. The total number of patents granted to Indian residents in all categories including individuals, SSI, large companies, academic and research institutions and government from 1995-96 to 2004-05 was 5785. Since the survey indicated that at least 139 patents had been granted to individuals having SSI units, extrapolating and assuming a similar trend, the 485 SSI units would have got 1021 patents which is about 17.6 per cent of the total number of patents granted to Indians during this period. It is further estimated based on the finding that 139 patents belonged to SSI, that at least 2.4 per cent of patents were in respect of SSI. The actual figure is likely to be in the range of a minimum of 2.4 per cent and a maximum of 17.6 per cent.

Thirty five units had registered their trademarks and twenty six had also registered designs, the actual number of trademarks and designs registered is not known as this information was not sought. Forty nine units actually marketed their inventions in some form or the other. Thirty two units felt that patents had helped them in increasing their revenue. Forty one units continued to maintain their patents at least for some time indicating a sound level of awareness about patents. Ten units also licensed out their patents. Some of the statements may be cross checked on sample basis at a later date.

Table 19 : Summary of the findings

Number of MSME respondents	66
Number of patents granted to the respondents (1995-2004)	139
Patents granted as per cent of total number of patents granted to Indian residents during the period	2.4
Number of units having trademarks	35
Number of units having registered designs	26
Number of units benefited by increase in revenue due to patents	32
Number of units continuing to maintain patents	41
Number of units having licensed patents	10
Number of units marketing their own patents	49

A further analysis of the data reveals that fifty three per cent of the units realized the importance of trademarks. Forty per cent of the units have protected their designs through design registration and this percentage is considered significant especially as all the units may not be engaged in activities which encourage design registration. Sixty two per cent of the units have maintained their patents for some length of time. Contrary to the general belief that SME do not have any knowledge of patents, the data shows that some of them have fairly good awareness about management of patents. Seventy four per cent of the units claimed that they have actually marketed their inventions which is certainly a very healthy trend. It is clear that a fairly good percentage of units having patents also have trademarks and designs. There is a strong likelihood that there would be many more units having either trademarks or designs but no patents.

Survey of patents granted in the names of MSME (1995-2004)

For the same period that the survey had been done for individuals i.e. 1995-2004, an exercise has now been undertaken for non-individuals. Here again the data available in Ekaswa B was utilized. From the list of Indian residents who had their patent applications accepted for grant, the individuals were removed. A further short listing of companies was done based on secondary information by removing the names of large companies. A total of about 336 applications were left after the short listing. Many companies had got more than one patent and all such duplications were removed so that a company's name appeared only once for the purpose of the survey. In the end about 280 companies, expected to be SMEs were identified for the survey. Initially, questionnaires were sent to about 170 companies but no response was received from even a single company. A market survey agency was later hired to carry out the survey on a sample basis across the country. For this purpose about 150 companies were identified and a questionnaire at Appendix 5 was utilized to collect the information.

One of the major problems faced during the survey was to find the physical location of a company from the information provided in the Gazette issued by the Patent Office until 2004 for carrying out interviews. The data suffered from two shortcomings namely, sometimes incomplete address and / or wrongly written names of applicants. Obviously locating such industries becomes difficult. This was further complicated by the fact that some companies had relocated themselves. It may be pointed out that the 2006-07 survey of MSME sector has shown that almost 30 per cent of registered MSME since the last sample survey in 2001-02 had either closed down or were not

traceable. Thus, the difficulty in contacting industries for the period under consideration can be partly understood. The new addresses in most cases were not known. In order to overcome this difficulty of address, secondary sources such as industries associations and internet were also utilized. It has been mentioned earlier that the patent information is not suitably digitized. The patent database was also searched in respect of these companies to find the missing information. Unfortunately, this route too did not yield satisfactory results. Some of the companies were not even listed in the database when searching in the field of granted patents. At the end of the day only 17 responses were received.

Another issue has been the many variations in the definitions of small and medium enterprises in India. In 1955, a small scale industry (SSI) was defined as a unit having an investment of Rs 0.5 million in fixed assets and employment of less than 50/ 100 workers with / without power respectively. This was changed in 1960 by removing the number of employees but retaining the investment in fixed assets at Rs 0.5 million. In 1966, a new definition for SSI was evolved, which restricted the investment in plant and machinery to Rs 0.75 million; the investment was no longer linked to fixed assets. Since then the criterion for investment in plant and machinery has continued. The limit on investment was raised to Rs 1 million in 1975, Rs 2 million in 1980, Rs 3.5 million in 1985, and Rs 6 million in 1991. The limit was raised to Rs 30 million in 1997 but this was brought down to Rs 10 million in 1999. Then in 2006, the concept of micro and medium enterprises was introduced; the term industry was changed to enterprise. As per the current definition, the investment in plant and machinery for a small enterprise has been raised to Rs 50 million. It can be seen that the industries under the present study which had their patent applications accepted were largely having their investment in plant and machinery up to Rs 10 million.

The registration of MSME units is not mandatory and only a very small percentage of units stand registered. Further, the records are maintained at the State level and these records are not digitized as yet. Therefore, some difficulties are faced in getting data regarding registered units. Due to the non-mandatory nature of the registration, the system for updating records is also not sound. It is likely that a company earlier registered as an MSME may continue in the same category for many years even if it has grown beyond the definition of MSME. Therefore, there is a difficulty in knowing the current category of a company due to lack of updating data. Out of the 17 units that responded, two informed that they were large scale industries with investment in plant and machinery of more than Rs 2000 million. While they have been excluded from the analysis, this also brings out the inability to gauge from the details available in the Patent Office data and with a reasonable degree of certainty, which units are MSME. The list of the 15 companies is at Appendix 7.

It is quite clear that the patent office had accepted applications of these fifteen companies for grant of patents subject to payment of fees and pending opposition if any. During the period 1995 to 2004, these 15 companies had 21 patent applications accepted for grant. Thirteen of them hold trademarks and nine of them had registered designs as well. Thirteen companies are engaged in exports and ten of them have protected their trademarks in the country of export. Ten of them are maintaining their trademarks by paying the official fees.

Many of them keep track of infringement of their IPR. They monitor trademarks, designs and patents for infringement by watching trademarks, patents and designs being used in the market, monitor trademark filing, visit exhibitions and also monitor through the internet. All of them have been using many different methods for advertising their products such as through brochures, catalogues, media, direct mails and sign boards. The majority of them have their own websites. However, it is felt that very few of them would have an idea that even brochures, catalogues etc. are their legitimate IPR and need to be managed properly, including through legal protection. Twelve out of them stated that they really do not know anything about the government schemes in respect of protecting IPR. Their awareness about IPR is through newspapers, attending workshops, identifying market needs and friends and relatives. The data of these companies are given in Table 20, Table 21 and Table 22

Table 20 : Companies having IPR

Nature of IPR and related activities	Number of companies
Patents	15
Trademarks	12
Designs	9
Exports	13
Maintaining TM	8
Websites	11
Registered MSME	14
No knowledge about government schemes	12

Table 21 : Method of advertisement

Website	11
Brochures	8
Catalogues	11
Trademarks	9
Media	9
Direct mail	11
Signboards	8

Table 22 : Source for learning importance of IPR

Newspapers	9
Attending workshops	4
Market needs	10
Friends and relatives	7
Others	1

A sample search was carried out to know whether these companies have obtained patents after 2004. As expected the result was not encouraging as these companies did not report to having any patent. There could be many reasons for not obtaining any patent after 2004 starting from lack of innovations to change of ownership to change in names of companies to closure of companies to change in business to no benefits coming after patenting and so on. If it is assumed that a company has not undergone any changes, then the post 2004 situation has not made many changes in the approach towards obtaining patents. However it is observed that they are using other forms of IPR to protect their business interests. Also, there would be new companies which may or may not be linked to the earlier companies and which have entered in the fray in the post 2004 period.

Analysis of patents granted to MSME (1995-2004)

In the absence of detailed data, exact information on patents granted to the MSME sector cannot be determined. Estimations based on the available data generated during the surveys would be the best choice at this stage. The study looks at the minimum and the possible maximum level of patenting activity during the period 1995-2004. It may be recalled that 139 applications were accepted on behalf of individuals and 21 applications on behalf of some industries. Therefore we have 160 applications accepted for grant of patents in respect of MSME which works out to be 2.8 per cent of all the patents granted to Indian residents during the period. In other words we can state that at least 2.8 per cent of the patents have been granted to MSME and this can be taken as the minimum level of patenting activity.

We have seen, from the set of data for companies, that 336 patents were accepted in respect of likely MSME. It has also been observed from the responses from individual inventors that 48.5 per cent can be taken as having SSI, and the number of patents granted to them, after extrapolation, can be estimated to be 1021. Therefore, the total number of patents granted to MSME would be 1357 which is about 23.4 per cent of the total number of patents granted during the period under consideration. This is estimated to be the maximum level of patenting activity of the MSME. Table 23 below gives the information about the common parameters used in the two surveys

Table 23: Common parameters used in the surveys

Number of MSME respondents	71
Number of patents granted to respondents (1995-2004)	160
Patents granted as per cent of total number of patents granted to Indian residents (1995-2004)	2.7
Estimated number of patents granted as per cent of total number of patents granted to Indian residents (1995-2004)	23.4
Number of units having trademarks	47
Number of units having registered designs	35
Number of units benefited by increase in revenue due to patents	41

It can be further seen that 66 per cent MSME got their trademarks and about 50 per cent got their designs registered. A fairly large percentage of MSME have benefited from their patents in terms of increase revenue. Further, MSME use various different methods for advertising their products and company.

Study of IPR in respect of pharmaceutical MSME

The difficulty in identifying MSME who had got patents has been explained earlier. A study done on transnationalization of Indian pharmaceutical SMEs analysed the data on Indian SME for the period 2000-01 to 2004-05 to assess their export performance and shortlisted 283 pharmaceutical companies using the Prowess Database, of which 105 were small, 39 medium and 137 were large. (Defining the Role of Government in Transnationalization Efforts of Indian SMEs - A case Study of Indian Pharmaceutical Industry, Jaya Prakash Pradhan and Partha Pratim Sahu, A research study submitted to Department of Scientific and Industrial Research, Government of India, January 2008).

The large companies were not the subject matter of this study. A list of small and medium industries with their names, investment in plant and machinery, data on exports, total sales and fixed assets was given in the study. A list of these companies is given at Appendix 8.

A patent search in the database of the Indian Patent Office has now been done for all the pharmaceutical SMEs mentioned above. Out of the 144 small and medium pharmaceutical companies, seven companies were left out as they had undergone merger and no further information was available on the mergers, leaving 137 SME for the present study. It was found that only the following ten firms had obtained patents namely, ABL Biotechnologies Ltd., Lekar Pharma Ltd., Mercury Laboratories Ltd., Shree Dhootpapeshwar Ltd., Venus Remedies Ltd., Zenotech Laboratories Ltd., Apex Laboratories Ltd., Fermenta Biotech Ltd., Tonira Pharma Ltd., Sanofi Synthelabo (India) Ltd. It can be said that 7.3 per cent of pharmaceutical SME have received patents.

These ten companies were now further analysed for this report. Based on searches carried out it was found that twenty four Indian patents had been granted to these ten companies. Most of these patents were granted on the applications filed before 2004. Three out of the ten companies belong to medium enterprises and the remaining seven fell in the category of small enterprises. In other words seventy per cent patent holding was with small enterprises. It may be difficult to generalize this statement without pre-supposing that the sample was truly random and representative. Nonetheless, it would be incorrect to say that medium enterprises necessarily are more patent savvy than the small enterprises.

In addition it is found that many companies within the 137 SMEs had filed patent applications in the last few years which had undergone 18 months publication. This is again based on the searches in the patent database which provides good information on patent applications filed and which have gone through 18 months publication. There are 22 companies, including the above ten, whose applications had been published. The total number of such applications is seventy eight which shows a much higher activity of patenting by pharmaceutical SMEs. The twelve companies other than the above ten companies are Bal Pharma Ltd., Blue Cross Laboratories, Haffkine Biopharmaceuticals Corporation, Ozone Pharmaceuticals, Gufic Biosciences, Ind-swift Ltd., Lincoln Pharmaceuticals, Neon Laboratories, Rusan Pharma Ltd., Span Dignostics, Zuventus Healthcare Ltd., and Tablets (India) Ltd. It is to be noted that most of these applications were filed after 2001. Therefore it is obvious that the inventive activity in these enterprises has moved up substantially in the last ten years. It can be inferred that almost 16 per cent of pharmaceutical SME are engaged in patenting activity.

An analysis of trademark holding of these 137 companies was also done. As the present database on trademarks cannot be accessed with owner's name alone, an extensive use of internet was done. There are 84 companies which have their websites describing the companies' background, activities, products etc. These websites also display trademarks or other marks on their site which identify the companies with those marks. There were 53 other companies which do not have their own websites but are widely covered in websites of other companies dealing with trade information. Therefore, it can be seen that these companies have taken steps to advertise themselves. Two inferences can be drawn from the above. Firstly, we find that only 22 out of 137 companies are presently active in the patent area whereas 84 companies have protected their trademarks and all the remaining are using internet to advertise their companies. Therefore, the companies seem to attach much greater importance to trademarks vis-à-vis patents or consider registering trademarks as a first step towards protecting their IPR.

Study of IPR in respect of ICT companies

A list of MSME in the ICT sector was obtained from Confederation of Indian Industry consisting of 124 MSME. The list is given in Appendix 9. These companies are engaged in a variety

of roles, primarily as solution providers to many different fields ranging from engineering, banking, telecommunication, education infrastructure and so on except for 15 companies which were found not to be linked to the ICT sector directly. Information in regard to one company could not be found. A patent search was performed on all the MSME to find out how many of them have acquired Indian patents and how many have filed patent applications. It turns out that none of the companies has obtained Indian patents based on the Patent Office database. Only two companies namely, Consim Info and P L Petro IT Pvt. Ltd. have filed patent applications. Clearly, the patent activity seems to be low in this sector which is quite similar to the patent activities of large IT companies. A further analysis was made to find out if these companies have registered or unregistered trademarks. It may be noted that it is not possible to search the trademark database on owner's name; the provision is only to find out if a particular trademark exists in a given class or not. Therefore a search was made through the internet. 86 companies had their websites which also depicted their trademarks; some of them were registered. These companies are aware about copyrights as most sites carried the copyright protection symbol. 22 companies did not show any trademark. About 80 per cent of the companies have their trademarks and about 20 per cent were visible on the internet in various trade databases. These ICT companies seem to be more active in having trademarks as compared to the drug industries.

A study has also been done regarding copyrights registered by these companies. The copyright data is not as yet digitized for making searches applicant wise. Therefore a manual search is the only alternative. A search was conducted in the copyright office for copyrights registered in the last two and a half years in respect of software. Only one company, Verve Communications, has registered one software. It was also noted while going through the records that most of the applicants were government agencies such as public sector undertakings, autonomous R&D organisations and a few academic institutions. Considering the growth and potential of the ICT sector, it is felt that there is a need to have a digitized copyright database.

Companies / incubates identified from the report "First Status Report on Technology Business Incubation in India 2009, Department of Science and Technology, Government of India" were approached for getting information about their IP activities. Ministry of MSME also wrote to the incubates for information. MSME who had received national R&D awards from the Government of India were also contacted (Appendix 6). However, only ten out of 350 companies responded. Some of them did not go for patenting as they either did not know about it or did not have enough funds or did not know how patents would be useful to them.

In essence the awareness about IPRs among the Indian MSMEs is not completely missing. There are enterprises which comprehend the need of protecting IPRs. However, the number is still very small considering the large size of the MSME sector. It has been further noted that the MSME sector has been active in protecting trademarks in India. An analysis of trademarks registered in India in classes related to textiles including readymade clothes, yarns etc, hand tools and leather for the year 2008-09 indicates that about 80 per cent of the trademarks have been registered by Indian entities. As many of the above industries are heavily populated by MSME, it is expected that a good percentage of registrants would be MSME. The Indian IPO should consider including information on whether an applicant is an MSME or not in the application form itself and reflect the same in the letter patent. Similarly, nature of other types of organization may also be collected. Perhaps all intellectual property offices may consider collecting the information.

Geographical Indications and MSME

120 geographical indications had been registered in India till March 31, 2010 over a period of six years. These have been awarded in the following areas:

Table 24 : GIs Registered

Sector	Number of GI
Handicraft	78
Agriculture	32
Food	2
Manufacture	8
Total	120

(Source: Official Journals of CGPDTG in respect of GI)

The most noteworthy aspect is that handicrafts and agriculture constitute 91 per cent of the GI registered. Secondly, handicraft sector is completely in the MSME sector. Thirdly, agriculture has a high share but it is not clear whether it will fall in the category of MSME or not. Although so many GI have been registered but the strategy of marketing under the GI is not really worked out. For example, there is no common mark to show that a GI exists for a product being sold. Secondly, no awareness campaigns have been launched to inform the public about the importance of GI. No mechanisms have been developed to catch people who falsify GIs.

It may be a good idea to develop a common mark for GI goods which can be used by people authorized to use GIs. This mark may be stamped on the good or could be in the form of a hologram or an electronic chip or print or some other form. Like the handloom mark it can be sold to authorized users.

3.3 Schemes for supporting IPR activities in MSME

There are a few schemes of the government of India to support patenting of innovations of the MSME, creating awareness about IPR, taking up pilot studies, conducting training programmes etc. Of these, the scheme of the Ministry of MSME is a wholesome scheme.

“Building Awareness on Intellectual Property Rights” (IPR) for the Micro, Small & Medium Enterprises (MSME).

Under the National Manufacturing Competitiveness Programme (NMCP) to enhance the competitiveness of the SME sector, Office of Development Commissioner (MSME) is implementing a scheme “Building Awareness on Intellectual Property Rights (IPR)” for the MSME. The objective of the scheme is to enhance awareness of MSME about IPRs and to take measures for protecting their ideas and business strategies. Accordingly, to enable the MSME sector to face the present challenges of liberalisation, various activities on IPR are being implemented under this scheme. (Appendix 10)

Salient Features

Under this scheme, financial assistance is being provided for taking up the identified initiatives. Details are given in Appendix 10. The main activities and the maximum Government of India grant under this scheme covers the following broad areas of interventions:

Table 25 : Financial assistance for IPR activities

Sl. No.	Activity	Maximum grant per application/ proposal (Rs. in millions)
a.	Awareness/ Sensitisation Programmes on IPR.	0.1
b.	Pilot Studies for Selected Clusters/ Groups of Industries.	0.25
c.	Interactive Seminars / Workshops.	0.20
d.	Specialized Training. (i) Short term (ST) (ii) Long term (LT)	(i) ST- 0.60 (ii) LT-0.45
e.	Assistance for Grant on Patent/ GI Registration. (i) Domestic Patent (ii) Foreign Patent (iii) GI Registration	(i) 0.025 (ii) 0.20 (iii) 0.10
f.	Setting up of 'IP Facilitation Centre for MSME'.	6.5
g.	Interaction with International Agencies. (i) Domestic Intervention (ii) International Exchange Programme	0.50 0.75

These initiatives are being implemented through the Public-Private Partnership (PPP) mode to encourage economically sustainable models for overall development of MSMEs. Although the scheme was approved in 2007, the actual implementation started on August 12, 2008. All the proposals are approved by a Project Implementation Committee and the Committee has met 11 times since the beginning of the scheme. 24 Intellectual Property Facilitation Centres (IPFC) have been set up in different parts of the country. Twelve of these IPFCs have been set up with the help of State governments, wherever Patent Information Centres (PIC) were set up by PFC. The remaining twelve are with different agencies like CII, FICCI, FISME, CSIR, National Research and development Corporation, Biotech Consortium of India Ltd. The IPFCs have filed 126 trademark and about 20 patent and 20 design applications on behalf of MSME so far. Forty five interactive workshops, 200 programmes for awareness and 7 pilot studies have been undertaken. Six short term training programmes have been held. The application form used for starting an IPFC is given in Appendix 11.

The office of the Development Commissioner, Ministry of MSME has an extensive network of MSME Development Institutes (MSME-DI) all over the country having qualified officers and staff. These institutes should be extensively used for awareness creation of IPR and guiding MSME in the matter. They should become the fountainhead of this important initiative. As a strategy clusters of MSME must be addressed to optimise the efforts.

There is a scheme of the Department of Information Technology for reimbursing the cost of foreign filing up to 50 per cent of the expenses involved in filing. The scheme is meant for start-ups in IT area. All the proposals from companies are evaluated by a committee of experts which looks into the patentability aspects. It has been frequently found that the companies are not clear about novelty and inventiveness issues and the attorney firms are not able to provide the right guidance. The committee often points out the weaknesses of inventions in terms of novelty

and inventiveness. The guidance thus provided has helped in improving the quality of patent applications. The committee also looks at the international search reports in case the applicant wishes to enter the national phase. A description of the scheme is given in Appendix 12.

Some State governments namely Gujarat and Uttarakhand have schemes to reimburse the cost incurred by MSME towards obtaining patents and trademarks.

3.4 Innovation in Indian manufacturing

In a study conducted by the CII to capture the perception of the senior management, 60 companies belonging to varied sectors (automobile components, machine tools, chemicals, metals and mining, electronics, FMCG, construction and capital equipment, others) were surveyed. The report observes that the ground situation is far divorced from the perception of the Indian companies that they have all it takes to carry out innovations in terms of thought, leadership, out of the box thinking, processes etc. Indian companies do not have the wherewithal and the right systems in place to manage innovations. In order to get a competitive advantage over other firms in their competitive set, Indian companies need to innovate on their business processes (such as HR systems, delivery processes and knowledge management). (Source: Innovation in Indian Manufacturing, Executive Summary, Confederation of India Industry).

The study had looked at a mix of SME and larger industries. The report did not study the IPR aspects. Surprisingly it was found that none of SME considered in this study own any patents nor have any of them apparently applied for a patent. Firstly, MSME which are feeder to large industries will have to develop compatible systems with that of large industries. Secondly, as large industry aims at innovations to remain competitive, it expects its partner MSMEs to be innovative as well to reduce the development time This could be in terms of process innovation, business process innovation in addition to other forms of IPR. Recently, a CEO of a car manufacturing industry in India too mentioned that they would not have any tie-up with an ancillary unit which does not have an R&D department.

The growth of the manufacturing industries of India has been quite remarkable in the recent past and this growth has been possible through various initiatives and steps taken by these industries. These steps would be in terms of development of know-how, business processes etc., which certainly constitute their IP although the IP is not necessarily in terms of patents. It should further be reckoned that no patent will succeed if associated know-how and business processes are not in place. Having said this, it is reckoned that the manufacturing companies have to go a long way in generating and protecting their IP.

Emerging MSMEs

The MSME sector is undergoing a rapid change as young entrepreneurs enter into the self-employment domain by starting their own companies. The change may be attributed to many factors. The first and foremost would be the growth in the higher education sector especially in the areas of IT and life sciences. Business opportunities in IT and BT sectors are increasing everyday and many young qualified people see them as the right career path. The culture of setting up of incubators especially TBIs was rolled a few years back and was a step forward to the experience in running Science and Technology Parks for about two decades. These incubators have attracted many first generation entrepreneurs in trying and perfecting their ideas such as proof of concept, technological ideas, business plans, and at times fine tuning their technologies. This opportunity was not available to start-ups in the earlier days. With the increasing contribution of the service industry in the GDP of the country, entrepreneurs have been moving towards this sector and IT provides a major gateway to this end. Further, based on available information, most of them will fall in the category of MSME. The needs of these entrepreneurs have to be addressed whenever policies regarding IPR creation and management are formulated by the government. IPR awareness should become an essential part of the training of incubates and the importance of IPR to their business and future growth explained.

Application of ICT by MSME

ICT brings many benefits to enterprises, big and small, in terms of operational efficiency, accessing information quickly and connectivity with the outside world. The penetration of ICT in Indian MSME has been found to be quite low. According to a study by CII, ICT adoption by MSME can be divided into four stages. Stage 1 is the nascent stage of adoption having only basic IT infrastructure in place such as basic level computerization, LAN etc. Stage 2 would include computerization of some standalone functions without any cross functional linkages. Stage 3 would include automation of core business functions. The firms would be using enterprise resource planning applications (ERP). Stage IV would include computerization in business network, e commerce etc. Most companies have been found to be at Stage I and it is only the medium enterprises where examples of Stage II and III have been achieved by a very few enterprises. The majority of small industries in the auto component sector are at Stage I and some medium enterprises are at Stage II. In the drug and pharma sector the penetration is quite low in the small units and only about 10-30 per cent companies have basic IT infrastructure and they are largely at Stage I. Medium enterprises in the drug sector are making better use of IT and 30-50 per cent companies have ICT enabled accounting systems. The reasons for low penetration are many including limited internal IT expertise, lack of training or awareness about ICT benefits, affordability for customizing IT solutions and network issues leading to reliability and affordability.

The report also states that as per the National Association of Software and Services (NASSCOM), Indian MSME lack formal ICT decision making structures and in the majority of firms, the responsibility of ICT decision making is often with the firm's owner (Source: Creating Competitive SMEs, Confederation of Indian Industries, October 2010). If this situation is transported to generation, protection and management of intellectual property, some interesting conclusions can be drawn which seem to affect the sensitivity of MSME to IPR. It may be seen that most MSMEs will not have the capability of doing prior art searches for determining patentability of their innovations or trademark searches to know if their trademarks are unique or not. A similar situation will prevail in case of designs and copyright matters. They will also not have the wherewithal to carry out any freedom to operate (FTO) analysis. Under the circumstances a big challenge faces the Indian planners and industries on ensuring that MSME do not land in situations where they keep fighting cases of infringement from time to time. At the same time a basic question arises as to how these units should be strengthened so that they move away from infringing other people's rights to protecting their own IP. Industry specific databases must be developed to reduce the chances of infringement by MSME and the databases must be available to industries and their associations. The task may be assigned to IPFCs being created by the government. The databases should be for patents, designs, trademarks, GI and new plant varieties. Initially, attempts should be made to make use of readily available data and databases.

3.5 Success stories

There would be many success stories where entrepreneurs have used IPR to their advantage. As these have not been recorded properly, it is difficult to get access to such stories. The success stories below have been captured showing how some MSMEs are using their IPR to their advantage.

1. Jyoti Cero Rubber

Jyoti Cero Rubber (JCR), a small company based near Jamshedpur, the mother town of steel industries in India, started by a husband and wife team as a very small outfit has reached a level of having a turnover of about Rs 650 million in about 5 years time. The husband Mr Manoj is an engineer and the wife is a chemist. They have been doing their own research and came out with innovative products for providing specific solutions to industry. The company was awarded the National Award in 2009 for outstanding Entrepreneurship and Research and Development by the Government of India, Ministry of MSME. The most successful product of the company is hybrid idler which is a

roller used in heavy duty conveyor belts in steel industries. The conventional idlers do not have a long life and result in frequent failures and require replacement. This invention is about a coating of copolymer jointly developed by the company with Tata Steels. A patent was filed before the launch of the product (404/KOL/2009). The product meets all the requirements of IS 8598. As a co-patentee Tata Steels have given their no objection certificate to JCR for commercialization of the product. JCR will pay a royalty of three per cent in the first year which works out to be Rs 3 million going up to Rs 12 million in the fourth year. The savings accruing to Tata Steels by replacing conventional idlers by hybrid idlers is expected to Rs 630 million for one plant only.

Mr Manoj mentioned during the meeting with him that he could not sell hybrid idlers to government owned or supported steel companies as these companies were not entitled to buy proprietary items. The procurement procedure and rules in government agencies require that proprietary items will not be encouraged (proprietary item is the one which is the only one of its kind.). As the product made by Jyoti Cero Rubber is an innovative product and there is no similar product available in the market, the product is considered a proprietary item and therefore, the government agencies find it difficult to include it under their procurement procedure. Such rules will have negative effect on innovation. (Source: meeting with Mr Manoj, company's brochure and Tata Steel website)

2. Flexitron

Flexitron, a Bangalore based company, started in 1987 as a one man show mainly in the field of alternative energy products. The CEO of the company Mr R S Hiremath, a graduate engineer developed a technique of dicing solar cells manually which was used in manufacturing very small photovoltaic (PV) panels. He manufactured solar battery chargers using waste PV cells for hearing aids using this technique. The product has been a great success. The company has filed nine patent applications in India; developed products based on these inventions and launched these products in the market. Some of these patent applications relate to LED arrays (1891/CHE/2008), E-Charkha (1960/CHE/2006), Emergency Lighting and ventilation Package for Lifts / Elevators (2069/CHE/2008), Power generation from manually Operated Equipment (2435/CHE/ 2007), Three Phase permanent Magnet AC Generator for use in Small Electric Generation (2492/CHE/2008) and Multi Directional Light Output Power LED Cluster (713/CHE/2009). The related products are solar lantern, Passenger lift safety, LED lighting, Multi energy utilization, Vector control System and E-Charkha. Currently the company's products are being sold in 16 countries through associates in China, Spain, UK and US.

E-Charkha is a retrofit device attached to the conventional charkha. Charkha is a hand operated spinning wheel very popular in rural India. The fitting produces electricity while spinning which can be stored in a battery and later used for lighting purpose. Important parts of the equipment are protected through three patent applications namely, method for electric generation, three phase generation of electricity and storage and use of the energy. Over 6000 units are presently in use.

He is a true innovator and understands the value of patents. This is what he has to say "the process of patent protection has been useful to design, develop and launch products in a wide spectrum of technology. This process has also assured a pricing edge to the products to recover development costs in many cases". The company started with Rs 1500 only and now it has an annual turnover of about Rs 27 million. (Source: Discussions with Mr Hiremath and information supplied by him)

3. GYATK RVCR Apparatus Pvt. Ltd.

Mr Das Ajee Kamath filed and obtained an Indian patent for his invention entitled "Rotary apparatus adapted to perform as variable compression ratio internal combustion engine, compressor, pump or a metering device". After the issuance of the patent he formed his own company GYATK RVCR Apparatus Pvt. Ltd. and the patent was licensed to the company. The company did not have any

infrastructure or resources for its operation and these were handled by outsourcing and utilizing hired resources. (Source: Creative India Vol. IV, Department of Scientific and Industrial Research, Government of India, 2009).

4. Badshah Industries

In the Indian State of Bihar, there is a small proprietorship firm carrying on the business of manufacturing incense sticks under the name and trading style BADSHAH INDUSTRIES. The firm was established by Mr. Amrit Pal Singh, having no formal schooling. He, along with his son Mr. Jagjeevan Singh (who has basic elementary school education), despite their modest educational background continues to amaze many with their relentless endeavour to establish a brand name for his firm. The company sells goods under a number of trademarks. The company already has nine registered trademarks. His firm has around 40 employees. He has also obtained registration for some of his trademarks in Nepal. The trademarks are advertised in newspapers and television.

Many of his trademarks have become distinctive due to the artistic creation of its label with its unique style of writing, design setting, colour scheme and other allied features. Not only has he made efforts to design the carton boxes which appeal to the masses yet have trademark value, he also undertook widespread promotional activities so that his trademark has acquired substantial standing amongst the local public and trading community alike. Some of the trademarks are shown below



Reg. Sept. 1999



Reg. Aug. 1999



Reg. Oct. 2000



Reg. June 1996

(Source: S SRana & Co, IPR Attorney, New Delhi)

5. Elico

Elico is a company located in Hyderabad which designs, develops and manufactures laboratory analytical instruments related to electrochemistry, spectroscopy and chromatography. The company is an IP driven company today. It was established in 1959 as a small company. As it grew, it was realized by the company that their entry into the market especially for scientific instruments would be difficult unless the products are innovated by the company and these innovations are properly and suitably protected. In addition to products, the company also provides technology services in new product development, product R&D, value engineering, prototyping and testing, regulatory compliance and engineering analysis. Having realized the need for patents, the company engaged itself in intensive R&D to design and develop patentable inventions to meet the market challenges. The company has an R&D team of qualified people.

The company has filed 10 patents including 4 PCT applications. It has also filed two applications each for designs and copyright. It has two registered trademarks. The company is driven by an IPR policy. Due to its reputation as an innovative company, it has signed an MOU with a US based firm for manufacturing a product and to jointly work on a new technology.

6. Zen Technologies Limited

Zen Technologies Ltd. is a medium enterprise and is a business leader in designing, developing and manufacturing simulators for defence and non-defence uses. The company was initially

incorporated as Zen Technologies and Computer Limited in 1993 and renamed as Zen Technologies in 1995. The company is engaged in a high-tech area involving hardware, engineering instruments and software. It has a portfolio of patents, trademarks and designs. The company has 4 Indian patents granted to it and has about 10 trademarks registered in its name. Two patent applications were filed in 1995 and another two were filed in 2001. The company has filed two more patent applications, one in 2008 and the other in 2011. It relies totally on its in-house R&D and has been earmarking substantial budget for the R&D.

7. Fermenta Biotech Limited

Fermenta Biotech Limited is a biotech company which started its operations in 1986 with the manufacturing of Penicillin G Amidas enzymes in India. Its manufacturing facilities are WHO GMP certified. Today it is the only manufacturer of Vitamin D3 in India. The company had bought this business from Duphar Inteferan Ltd. in 2004. Fermenta has six Indian patents to its credit and one application is in pipeline. All the applications were filed in 2005 or later.

8. ABL Biotechnology Limited

ABL Biotechnology Limited is an upcoming company in the biotechnology area and is based in Chennai. This company was incorporated in 1992. The company has one patent to its credit which was filed in 2005. It has established an R&D centre in Vishakhapatnam which is recognized by the Government of India, Department of Scientific and Industrial Research. ABL has also received some research funding from the Government of India. In order to venture into new areas, the company has tie ups with academic and research institutions such as Bharathidasan University, National Institute of Oceanography and ALM Post Graduate Institute of Medical Sciences.

9. Mercury Laboratories Limited

Mercury Laboratories Limited is a 47 years old company operating from Vadodara, Gujarat. It is engaged in formulation development of various conventional dosage forms and novel drug delivery systems for known and new molecular entities. The company has two Indian patents to its credit and one application has been filed.

10. Venus Remedies Limited

Venus Remedies Limited is a small sized research based pharmaceutical company established in 1991, engaged in manufacturing of large volume parenterals (LVP) with a product range of 15 products. The organization realized the need to place emphasis on IPR and set up an IPR department about five years back. The company has a well-defined IP policy. The IP department conducts freedom to operate search before finalizing a research product. The company has licensing and research collaborations with Institute of Microbial Technology, Punjab University and National Institute of Pharmaceutical Education and Research. It has got 3 Indian patents and six applications have gone through 18 months publication. It has patents on its products in USA, some European countries, Australia and New Zealand. It has licensed one of its patents to a South Korean company.

11. Apex Laboratories Ltd.

Apex Laboratories Ltd. was set up in 1978 by a group of pharmaceutical executives in Chennai. The company introduced zinc based formulations in India and is now one of the leaders in this area. It started as a cottage industry and today it has a workforce of about 1000 persons. One Indian patent is granted to it and the company has filed thirteen patent applications in the Patent Office.

3.6 Other issues

Generation, protection and maintenance of IP rights entail investment and liquid funds, especially in the case of patents. Inventions are the result of research and development and trials over a period of time which would need deployment of human resources, equipment, apparatus, physical space, raw materials, testing facilities and so on. Identification of a problem for which alternative solutions are to be found out is by itself a critical component of the journey towards inventions. This identification is largely based on inputs received from the market, customers and other sources including the people working in the company. A systematic approach is required for capturing the inputs and converting them into a problem which can be physically solved. During the problem solving stage, setbacks and failures are bound to take place and each failure may demand infusion of additional funds. An invention by itself may not be a marketable product. For converting an invention into a product many steps have to be gone through such as prototyping, testing, product designing etc. in mechanical engineering cases. In the case of chemical engineering the steps may be scaling up to different levels, safety studies, characterization and so on. It also has to be ensured at some stage that regulatory and standards requirements if applicable are also satisfactorily met. Even after all these efforts, the success of the product in the market is not ensured. Therefore the risks involved are high both in terms of technological and business risks.

Risks are especially high for an MSME. This element of risk is not adequately factored into the loaning system. It appears that financial institutions should also come forward to share some risks. In order to promote innovations in the MSME sector for introducing new and competitive products in the market, there is a genuine need to provide risk capital to them on terms which are different from those applied to expansion activities such as purchase of new machine or space or setting up branches. Innovation loans may be introduced with a definite risk factor to be shared between the loaning agency and the MSME.

Legislative measures in the past have been more favourable to the perspective of the financial institutions advancing credits to MSME. In the process debtors' interests and their problems were overlooked which led to dilution of the risk taking capacity of such enterprises. In case of a default a debtor may be sent to jail and his assets may be confiscated. The fear of going to jail could deter any one from taking financial risks. "There is no decent and graceful way of getting out of the business" stated the Secretary General of Federation of Indian Micro and Small & Medium Enterprises (FISME), Mr Anil Bhardwaj. As mentioned earlier most firms are proprietorship or partnership firms, hence they have to assume full liability. Many problems have been highlighted in this connection such as high cost of credit, collaterals requirements, absence of equity capital and lack of access to global markets.

The government has recently promulgated an Act on Limited Liability Partnership (LLP) which would open up new opportunities by attracting new investment and also make exit and closure much easier – this is expected to be particularly beneficial to MSME. The salient features of the LLP Act are given in Appendix 13. (Source: <http://business.gov.in>). There should be large scale awareness campaigns about LLP among the MSME as they would be encouraged to take more risks. Help desks may be started in associations of MSME with the assistance from the government.

The agriculture sector usually does not find a place in discussions regarding MSME but there is a strong case for knowledge about IPR here. It may be recalled that agriculture is one area where the percentage of patent applications filed by Indian residents is much higher as compared to several other areas. Farmers need to know about protection of new plant varieties for which they need some different type of knowledge and support. The other aspect is that they should not violate the IPR of others such as seed companies, manufacturers of agriculture equipment etc.

A couple of years back the issue of trademark on Ponni rice came to surface. Ponni rice is a variety that was developed by the Tamil Nadu Agriculture University quite some time back and the rice had a good market in Malaysia because of a fairly large population having origin in Tamil Nadu. A company in Malaysia took a trademark "Ponni" and it issued notices to the importers of Ponni rice in Malaysia stating that marketing that rice as Ponni rice was an infringement of its trademark. The

importers, worried with the legal notice, stopped the import. The Malaysian High Court too gave a decision in favour of the Malaysian company. The issue was also discussed at the level of the two governments. The matter has been resolved by the Malaysian court and “Ponni” trademark has been declared invalid by the court. (Source: The Financial Times, August 18, 2010). As exports get affected by such developments, it is necessary to keep a vigil and initiate suitable actions in time. This is a case which perhaps calls for a discussion whether trademarks identical with a known name of an agricultural product should be issued or not. And, if such a trademark is issued, what should be the redressal process?

The above situation can occur in respect of manufactured products as well. There are some important gatherings from meetings and discussions with MSMEs from time to time over the last few years. Firstly, patents do not seem to attract the attention of industries for several many reasons such as not having knowledge of IPR, cost involved in generation, protection and maintenance of patents and inadequate experimental / testing facilities. As stated earlier, there is no source for raising risk capital. The absence of venture capitalists is a negative factor as the private equity capital is not available to share the risk. There is also no system to know about patentable inventions in MSMEs and as a result venture capitalists also do not have a starting point. Apparently, a number of venture funds companies are getting set up in India and this development may open new opportunities for MSMEs.

An important challenge for the government is how to make the results of publicly funded research and development available to MSME quickly and at a reasonable cost or free of cost. Presently, there is no instrument of policy which makes it obligatory on the part of research institutions to empower MSME by making R&D results available to them. Neither is there any system in these institutions to reach out to MSME with research results / models etc. There is hardly any publication which lists out inventions or developments made at such institutions; even their websites do not give such information. As there is no window for MSME, many institutions tend to give more attention to larger industries rather than to MSME. When obtaining an IP license, MSME may have to compete with larger companies including multinationals.

As a result, IP licensing or technology transfer from these institutions to MSME does not take place, which is not a healthy situation from the public policy perspective. At the national level there is a need for facilitating IP licensing to MSME from the publicly funded R&D institutions and in fact, the first right to such IP should be with the MSME. Whether the IP should be licensed free or at some cost needs to be decided based on the benefits of each alternative. While doing so, it must be appreciated that the MSME sector provides large employment which helps in meeting national objectives. At the same time the R&D institutions licensing their IP to MSME may be encouraged with increased funding and better facilities.

MSME have expressed their concern in different interactions on the time taken by the Patent Office in granting patents. There have been cases when the grant of a patent took 8-9 years after filing. An MSME finds it awkward and not rewarding as he is not sure whether he can really take advantage of the patent or not. This belief or apprehension may not be well placed in respect of owning the patent rights. However, a patentee feels severely handicapped in case of an infringement by someone else because the patentee cannot initiate infringement proceedings before the grant of the patent. On one hand there is a strong case for reducing the time taken to grant a patent in India and at the same time MSME must be educated on how to protect their patent rights and leverage the rights to meet commercial ends.

The cost involved in obtaining and maintaining patents has been raised by some MSME from time to time during interactions. They feel that the costs are on the higher side. Keeping this in view, the government has introduced many schemes for financially supporting the patent activity. Sometimes MSME may lose interest during prosecution of their applications. Mr. H Subramaniam, a well known patent attorney informed that many MSME lose interest halfway through and quite often find it difficult to settle all their bills. MSME are not prompt in providing answers to examination reports issued by the patent office during prosecution. Their recordkeeping of papers is also not up to

the mark. Therefore MSME need to be guided suitably for understanding the benefits of patents. At the same time it may not be correct to over-emphasise the need for patents.

“Based on the India Enterprises Survey, licensing and turnkey operations from domestic and international sources are an uncommon way of acquiring new technologies: only 2.7 per cent of enterprises cite this as their important channel for absorbing technology-with 1.7 per cent relying on domestic and 1.0 per cent relying on international sources. According to aggregate figures on royalty and license fees payments, India lags comparator countries – India spent \$ 420 million in 2004 compared to \$ 3.5 billion in China and \$ 4.5 billion in Korea.” (Unleashing India’s Innovation- Mark A Dutz, World Bank 2007).

Prima facie it would appear that SME would generally not rely on import of technology. The idea of importing technology is very good for up-gradation of existing technology or introducing new technology. However, the question being raised is whether companies outside India would be interested in licensing technologies or would be more interested in setting up joint ventures with Indian companies or in their own units in India. The government may evolve separate systems and instruments for encouraging dialogues between SME of India and SME of other countries through focused cooperative agreements and also create a conducive environment for technology transactions.

While getting engaged in a technology transaction, it should be reckoned that Indian companies need to have negotiating skills on the IPR front which in turn would call for excellent skills on drafting and finalizing contracts. For example it would be extremely difficult for many companies to study the chain of ownership of a patent which they may be obtaining under a license. This could produce a very awkward situation for the licensee in case of infringement. It is also suggested that anti-competitive practices in contractual licensing of IPR be enforced by the government in the strict sense. Some of these practices are mentioned in the Competition Act but it covers a very few issues which are not sufficient for the Indian companies. As most companies still do not have knowledge about the provisions of the Competition Act and more so about the provisions linking them with IPR, a separate campaign should be launched for the awareness among MSME about the subject. Ministry of MSME may assign this task to one of the associations like FISME.

Chance inventions are rarely going to happen. Further, the competition demands a careful strategy in the market place and the launch of new products as soon as possible. An organized R&D will stand a company in good stead and for doing so it must have trained researchers who are familiar with the company as well as the market. Therefore training of people is an important element of any innovation ecosystem. Only 16 per cent of Indian manufacturing firms offer in service training compared to 92 per cent in China and 40 per cent in the Republic of Korea.

The World Bank study has found that in India in the micro enterprises (less than 16 workers), 7.36 per cent have some formal training, 7.3 per cent have formal in house training and 2.4 per cent have formal external training. In small companies (between 16-100 workers) these numbers are 15.7 per cent, 15.0 per cent and 7.2 per cent respectively. In medium companies (between 100-250 workers) the percentages are much better and these are 30.7 per cent, 29.2 per cent and 18.2 per cent respectively. In large companies 43.4 per cent of employees have some formal training, 40.4 per cent have formal in house training and 25.0 per cent have formal external training. (Unleashing India’s Innovations, Mark A Dutz, World Bank) The lowest number of trained people are found in the areas of leather products, metal products, plastics and rubber and garments. Absence of trained human resources may be one reason for lack of innovations. Therefore training of workers seems to be an important component for enhancing innovations. The training must focus on skill development of different kinds. It is a gigantic task and many industries may not be interested as they are already making profits. From the long term perspective, the government must think about enabling systems. For example weighted tax exemption of 200 per cent or more may be given to companies on a yearly basis for training staff for engaging in R&D. These expenses obviously must be reflected in their balance sheets.

3.7 Utility models

Utility models are weaker forms of patents in the sense that it is necessary for an invention to be novel to be eligible for a utility model. These are also known as “petty patents” or “innovation patents”. The criterion of inventiveness is not applied at all and the applications are also not put to any examination. The term of a utility model varies from country to country and may range between 5 years to 15 years. Further, these are mainly applicable to mechanical engineering items.

The idea of having a utility model system in the India has been discussed many times and it is felt that it would help the MSME sector. Prima facie this does appear so as a large number of the Indian MSME are engaged in manufacturing. At best this is only a conjecture as there is no evidence to indicate whether the system of utility model will be beneficial to MSME in India. It is possible that many outside players will benefit more from this system as against the Indian MSME. No detailed study has been made in India on this subject on the lines of that done in Australia before introducing this system of protection. It is true that the granting procedure may become simpler but the enforcement process may not keep pace with the granting pace. It is also observed that there is hardly any suggestion from the industry that such a system should be in place. One obvious reason is that the sector itself is not really aware of IPR and therefore may not be in a position to understand the difference between the various IPR protection systems.

The present patenting system seems to be working equally well for MSME in the country. It may be appreciated that considerable time would be required to prepare a new Act and take it through the process of debates and clearance by the Parliament. It would be time consuming and may take a few years for it to be enacted. However, it is a subject for research in India, a detailed study and analysis should be looked into from the perspectives of public policy and the advantages it is likely to provide to the MSME sector in India. Another important aspect is whether India should go for a weaker legislative system after having adopted a much stronger and studier system for patenting.

3.8 New opportunities

Many new opportunities are going to emerge for the MSME sector as India signs more and more trade agreements with other countries and expands its export network. On the domestic front, on one hand a huge market awaits new products; at the same time a major challenge is posed by foreign players entering the Indian market and trying for a share in the pie. There would be continuous need for newer products and that too at short time. One of the policy initiatives namely, offset policy, recently adopted by the government of India would be beneficial for the SME.

Offset Policy

India's offset policy for the defence industry states that any purchase from a foreign supplier in excess of \$70 million will require a reinvestment of 30 per cent of the total purchase amount in terms of components and services from India including establishing training facilities, technology sharing, sourcing components or using IT services from Indian firms. The policy is extended to state owned carriers such as Air India and also includes all imports by defence PSUs, ordinance factories and private participation of industry too. This policy would imply a reasonable participation by MSME in absorbing the reinvestment of the 30 per cent of the total purchase amount through technology sharing which would have strong component of IPRs which these companies have to understand and honour. The process may involve entering into technology licensing through contracts which may have clauses on IPR of different types. In some cases making full use of the offset policy may be difficult without sorting the IPR issues. Special attention will have to be paid to keep away from anti-competitive aspects of licensing of IPR and doing so will be in line with TRIPS and also Competition Act of India. Mr. Gurpal Singh, Adviser CII emphasised the importance of the offset policy for the Indian MSME and the need to handle IPR issues in the process of engaging MSME in this activity.

Other initiatives of the Government of India

There are many initiatives taken by the Government of India from the overall perspective of supporting the growth of MSME. These initiatives take into account the technological and business issues. The National Manufacturing Competitiveness Programme (NMCP) is the nodal programme of the Government of India to develop global competitiveness among India MSMEs. Conceptualized by the National Manufacturing Competitiveness Council, the programme was initiated in 2007-08. There are ten components under the NMCP targeted at enhancing the competitiveness for the entire value chain of the MSME sector. The scheme on Building Awareness on IPR is totally dedicated to IPR and has already been discussed elsewhere. Out of the remaining nine schemes, some schemes would have to deal with IPR. These schemes are:

- **Scheme for providing Support for Entrepreneurial and Managerial Development of SMEs through Incubators:**

The scheme aims at nurturing innovative business ideas (new/indigenous technology, processes, products, procedures, etc.), which could be commercialized in a year. Under the scheme, various institutions like engineering colleges, research laboratories etc. will be provided funds up to Rs. 0.625 million for handholding each new idea/entrepreneur. The incubator will provide technology guidance, workshop and laboratory support and linkage to other agencies for successful launching of the business and will guide the entrepreneur in establishing the enterprise. Presently, the existing TBI have a weak component of IPR. Patents may not be the central issue in most cases. However, incubates must be trained in documenting business ideas and the process developed for achieving the ideas.

- **Setting up of New Mini Tool Rooms under Public Private Partnership (PPP) Mode:**

Under the scheme, Mini Tool Rooms (MTRs) are proposed to be set up by providing financial assistance to private promoters on viability gap funding basis. The central assistance would be up to 40 per cent of the project cost restricted to Rs. 90.0 million. The MTRs would improve the competitiveness of MSMEs in the manufacturing sector by creating capacities in the private sector for designing and manufacturing quality tools as well as by bridging the gap between the demand and supply of trained manpower in the industry. The approved Plan expenditure under the scheme is Rs. 1350 million. These tool rooms should have a special window for undertaking fabrication of prototypes of innovated products.

- **Design Clinics Scheme for MSMEs:**

The main objective of the scheme is to bring the MSME sector and design expertise into a common platform and to provide expert advice and solutions on design problems, resulting in continuous improvement and value-addition in existing products. It also aims at value-added cost effective solutions. The GOI contribution is stipulated as Rs. 490.8 million for this scheme. The broad activities planned under the scheme include set up of a Design Clinics Centre in Delhi along with 4 regional centres for intervention on the design needs of MSME sector and associated financial requirements. The scheme will be more useful if design improvements are constantly evaluated from the IPR angle as there would be scope for design registration.

- **Technology and Quality Upgradation Support to MSMEs:**

The objective of the Scheme is to sensitize the manufacturing (MSME) sector in India to upgrade their technologies, usage of energy efficient technologies to reduce emissions of Green house gases, adoption of other technologies mandated as per global standards, improve their quality and reduce cost of production etc., towards becoming globally competitive. The major activities planned under the scheme include capacity building of MSME Clusters for Energy Efficiency/Clean Development Interventions, implementation of Energy Efficient Technologies in MSME sector, setting up of Carbon credit aggregation centres and encouraging MSMEs to acquire product certification licences from national/international bodies. The scheme's total budget is

Rs. 1409.8 million with GOI contribution of about Rs. 650 million. Technology upgradation could be through getting technology license, developing own technology or a combination of the two. Identification of possible technologies likely to provide benefit in the long term is the central issue. Patent information and information about other IPR would provide information about niche areas, important players etc. Technology license will have many clauses on IPR and these should be understood by the concerned MSME especially if the licensor is from a foreign country.

Prime Minister's Task Force on MSME

Considering the importance of MSME in the overall growth of the economy, the Prime Minister announced the setting up of a Task Force on MSME in August 2009. The Task Force classified the common issues into 6 major thematic areas namely (1) credit, (2) marketing (3) labour (4) rehabilitation and exit policy (5) infrastructure, technology and skill development and (6) taxation. The Task Force submitted its report in January 2010. The recommendations of the Task Force are at different stages of implementation. The Committee observed that given their scale of operations, it is not only difficult for MSMEs to invest in research and development activities but even to acquire modern and latest technologies available in the market due to high costs. The Government has launched the National Manufacturing Competitiveness Programme with the objective of enhancing the competitiveness of MSMEs. The programme includes several new and innovative schemes (viz., Lean Manufacturing, Design Clinics, Quality Management Standards and Quality Technology Tools, Incubators, etc.) for assisting the MSMEs in adoption of best international practices to enhance their competitiveness. Simultaneously, there is a need to make massive efforts for dissemination of information on the latest/modern technologies among the MSMEs and supporting them for undertaking technology up-gradation, acquisition, adaptation and innovation. In addition, the Government also needs to encourage R&D in the engineering/technical institutions through suitable tax incentives and setting up of Business Incubators.

In the present global environment, the MSMEs have to be competitive to survive and thrive. To ensure competitiveness of the MSMEs, it is essential that the availability of infrastructure, technology and skilled manpower are in tune with the global trends. MSMEs are either located in industrial estates set up many decades ago or are functioning within urban areas or have come up in an unorganised manner in rural areas. The state of infrastructure, including power, water, roads, etc. in such areas is poor and unreliable. Further, the MSE sector in India, with some exceptions, is characterised by low technology levels, which acts as a handicap in the emerging global market. As a result, in the face of competition from imports, the sustainability of a large number of MSEs will be in jeopardy. Although India has the advantage of a large pool of human resources, the industry continues to face deficit of manpower with the right skill set in respect of specific areas like manufacturing, service, marketing, etc. The HR problem is further exacerbated by the high attrition rate.

“Worldwide, MSMEs are credited with high level of innovation and creativity, which also leads to higher level of failures. Keeping this in view, most of the countries have put in place mechanisms to handle insolvencies and bankruptcies. The present mechanism available in India for MSMEs is archaic and does not focus on revival. Hence, business failure in India is viewed as a stigma, which adversely impacts individual creativity and development. An enabling policy environment, which helps viable enterprises facing temporary disruptions to continue, while allowing others to close down speedily, with an appropriately structured social security base, is essential for the promotion of MSMEs in India”.

Major recommendations of the Task Force

All the recommendations of the Task Force have not been listed here. Care has been taken to present only those recommendations which have influence on generation, protection and management of intellectual property rights.

1. The government should take steps to create an overall enabling environment using appropriate legal and fiscal instruments, to incentivize the transition of MSMEs from the unorganized to the organized sector as well as for their corporatization as entities. It should also encourage higher investments for innovative and knowledge based ventures as well as for research and development through greater partnership between the industry and academic institutions.
2. The government should earmark additional public spending to the tune of Rs.50,000– 55,000 million over the next 3-5 years and specifically target deficiencies in the existing infrastructure and institutional set up. These funds may be used to: (a) support the establishment of Rehabilitation Funds in the States for the revival of potentially viable sick units; (b) assist MSMEs in the acquisition and adaptation of modern clean technologies as well as creation of Technology Banks and product-specific Technology Development Centres; (c) promote establishment of business incubators in educational institutions of repute; (d) renovate existing industrial estates and develop new infrastructure for MSME sector, with sustainable urban governance mechanisms; (e) re-engineer, strengthen and revitalize District Industries Centres to enable them to play a more active role in advocacy and capacity building for MSMEs and, as appropriate, in their rehabilitation; (f) strengthen NSIC's equity base for enhanced market support to MSMEs; and (g) up-scale the existing programmes of entrepreneurship and skill development targeted at MSMEs.
3. The ability of MSMEs (especially those involving innovations and new technologies) to access alternative sources of capital like angel funds/risk capital needs to be enhanced considerably. For this purpose, removing fiscal/regulatory impediments to use such funds by the MSMEs should be considered on priority.
4. Set up a mechanism in the Ministry of Defence to ensure that the offsets under defence purchases are suitably focused to support the small and medium enterprises in upgrading their capacities, capabilities and technology. Ministry of MSME may be associated in this exercise. The Offset Policy for other departments under consideration should also give priority for extending the benefits under the off-set policies to the MSMEs in the country. The mechanism for review should include a representative of the MSME.
5. A coordinating body (to function as a Technology Bank) be established for continuous interaction with various agencies engaged in development of new technologies for the MSMEs like Department of Science and Technology, Department of Scientific and Industrial Research, Department of Bio-Technology, Council of Scientific and Industrial Research, etc., for dissemination of information on appropriate technologies among the MSMEs. This body may also have representatives of MSME Associations.
6. A symbiotic relationship between the MSME clusters and the Technical Institutions be developed by linking each cluster with a Technical Institution to solve the technical and design related problems of the MSMEs.
7. Funding to about 1,000 engineering/technical institutes located across the country be provided for setting up of Business Incubators. Schemes of Department of Science and Technology/MSME may be upgraded and enhanced for this purpose with an additional investment of Rs 10000 million
8. A Technology Acquisition/Development Fund or an appropriate scheme be formulated in consultation with the Planning Commission and others within 3 months to support MSMEs to undertake technology acquisition, adaptation and innovation to enable them to move up the value chain and effectively meet the challenges of a competitive environment. The funds for this purpose, estimated at Rs 15000 million, may be made available through budgetary sources. A substantial part of the fund should go towards promotion of clean technologies among MSMEs so as to meet our national commitment to reduce emission intensity by about 20 per cent between 2005 & 2020.

The above recommendations are being considered by the government and are at different stages of implementation.

The recommendations have stopped a step short of saying that generation, protection and management of intellectual property rights would be the key instruments for continuing innovations. It further gives an impression that innovations have been linked to science and technology and that should be focused in the name of innovations. It must, however, be realized that innovations are possible in any area of human endeavour and the efforts should focus on all types of innovations. Innovation by itself will not support upfront movement in the value chain unless proper mechanisms, systems and strategies exist for legally protecting innovations within the country and outside the country as well. There has to be sharper focus of the IPR issues. IPR should be taken up in its entirety including all types of enterprises irrespective of the fact whether they belong to manufacturing, service or agricultural sector. The importance of each form of IPR is to be transmitted along with the basic principles of exploiting IPR, their management, and avoidance of infringements. Further, they should also know how to protect their interests while engaging in international operations. They must understand the principles of cross-border measures for protecting IPR and use the measures to their advantage. A patent or a design by itself is not adequate for a marketable product as many steps are involved in the process of going to the market. MSME should be made aware of these aspects.

3.9 Discussions

In the India MSME Summit held by Economic Times in 2009, many issues related to MSME were discussed but as a topic IPR did not come up. Several issues were raised which will have their relationships with IPR but they were not identified in that context. It clearly shows that industries and their associations in general do not have a working understanding of IPR. For example it was noted that access to funds for new projects / start-ups have dried up. Venture funds and private equity funds have also disappeared indicating that new projects could not be undertaken by the industry for want of funds.

Many new projects would have components of IPR which need to be protected and managed. If innovations are to be promoted, then funds for new projects are needed badly and they are needed for a longer time as taking innovations to the market is a complex process and market acceptability may come only after a few iterations. Risks are involved at every phase and some coverage is required at all stages. Bank loans do not have a separate window for financing innovation projects, particularly of SME. Many SME do not go or aspire for high class inventions and may not have the backing of research institutions like CSIR or IITs for being eligible for getting loans under schemes of the Government of India such as Technology Development Board. Their innovations may relate to processes, business operations, improvement etc. Some of them may be better protected as trade secrets so that SME have ownership over them.

A separate institution may be considered for the purpose of assessment of innovations, providing professional guidance, helping in protection and arrange for funds. The institution can have a corpus of say Rs 1000 million. The management of the institution should be with industry sensitive associations and government but should be managed by the right professionals having IPR expertise, financial expertise, technological acumen etc.

It has been reported by inventors that government procurement policies are not friendly to MSMEs. For example, most procurement procedures followed by government agencies require that the company should have a minimum experience and the product should have been there in the market for a specified period of time. This is not possible for a new invented product. Industries including MSME will always face this road block. There is a need for a system to have the newly innovated products evaluated and then considered in the tender by relaxing/ modifying the norms of two years of experience with the product and single tender. Proper guidelines may be developed for deciding whether the product is really an innovation or not. A sound policy is needed in this direction. Promotion of innovation in the domestic market would improve the export potential as well. In spite of a low level of participation by MSME in terms of numbers in exports, the contribution by the MSME in total exports of the country is 45 per cent. Exports can be enhanced by a larger participation

of MSME when the share of MSME in total exports may also be much larger. A portion of the export can be driven by IPR.

Border measures, whereby goods that infringe any IPR of the importing country are confiscated, may become a serious bottle neck in exports if the MSME are not aware of the risks associated with infringement of IPR. It must also be brought to their attention that MSME in India too can stop entry of products into India if the products infringe their IPR.

During interaction with many MSME in the country, it has been pointed out by them that their trademarks are copied in countries of exports. The most common mistake made by them is not getting their trademarks registered in the country of export. SME will take some years to learn these intricacies and in global interest it would be desirable to have a mediation mechanism on the same lines as the WIPO mechanism for domain names.

The spectrum of Indian MSME is very large and it may be a colossal task to address the IP needs of all of them at this stage when the IPR awareness itself is still low. A careful graded approach may be required to identify the form of IPR which may be emphasized while creating awareness and providing supporting mechanisms. For example, the traditional micro enterprises may not be interested in patents as they may not be engaged in activities leading to patents. Enterprises engaged in handicraft and agriculture goods would be benefited by knowledge of trademarks and geographical indications both in the domestic and international markets. Patents may become important for start-ups in IT and biotechnology sectors.

While talking of patents for ICT companies, it should be remembered that they can benefit a lot by registering their copyrights on software, algorithms, databases etc. Medium enterprises are good candidates for awareness in patents and other forms of IPR as they can support formal research and spend on IPR protection and management. Prof Subramanhya, Head and Chairman, Management Department of Indian Institute of Sciences, Bangalore, who has been engaged in research on innovation and MSME for many years now, feels that it is the engineering sector SMEs which would look for patents as the majority of SME entrepreneurs in this sector are more educated, particularly with technical degrees or technical plus management degrees.

In the area of biotechnology the picture is that MSME working in this area attach a great deal of importance to patents. According to Dr. Purnima Sharma, Managing Director of the Biotechnology Consortium of India (BCIL) which also manages an IPFC, the maximum enquiries received by them relate to patents and patent filings. These MSME are not aware of the patentability criteria and the process for patenting. This IPFC is dedicated to the area of biotechnology. Along with financial support, mentorship and guidance is required by these units to be able to take the inventions to the marketable stage. She feels that the support provided by the Ministry of MSME for patents granted in India and other countries should be enhanced. Lack of awareness about significance of protecting IP for sustainability and competitive edge and resources are some road blocks.

The OECD “Intellectual Assets and Innovation, The SME Dimension, 2011” has come out with some interesting findings; some of which are similar to the findings of this report. It has been found out that SME in all sectors, except the high-tech manufacturing sector, use trade secrets and confidentiality agreements to a greater extent than formal IPR such as patents, trademarks and copyrights. Lack of awareness and of a coherent IPR strategy is a common limitation in SME internal management practices. The lack of strategy is primarily due to lack of training of staff in IPR. The report further finds that a number of innovative SME are discouraged from using the IP system due to lack of confidence in the enforcement mechanisms and the perception of high costs of monitoring and litigating. These problems tend to get multiplied when SME operate internationally. Among the many recommendations made in the report, the important ones relate to raising awareness about IPR and their strategic use, training, reducing financial constraints to access IPR, streamlining procedures for obtaining IPR, reducing time and cost for litigation and enforcement and improving cross border IP information, coordination and enforcement.

SME need exposure to anti-competitive practices inherent in many contractual licenses relating to IPR. This need will grow more and more as industries get engaged in IPR transactions during in and out licensing.

3.10 Findings/Conclusions

Awareness about IPR

1. Contrary to the common belief that awareness about IPR among MSMEs is completely missing, some MSMEs appear to be aware of IPRs and comprehend the need for protecting IPR. The awareness seems to be more about trademark and designs as compared to patents. However, the number of MSME engaged in IPR activities is still very small considering the large size of the MSME sector in India.
2. Trademarks, designs and copyrights seem to make direct sense and have greater meaning and usefulness to most MSMEs and adequate emphasis should be given to these areas while conducting awareness programmes.
3. Patents do not seem to attract the attention of many MSMEs. The reasons could be diverse – inadequate knowledge about patents, cost involved in generation, protection and maintenance of patents and inadequate experimental / testing facilities. However, in the area of biotechnology the thinking seems to be different as these MSME give the first priority to patents.
4. There are several schemes of the Government of India which aim to create awareness about IPRs among MSMEs, conduct training, and provide technical and financial assistance for protecting IPRs. While it may appear that an excessive number of programmes are being held, for a country like India with such a large population of MSMEs even these efforts are still below the critical level.
5. A careful graded approach may be required to identify the form of IPR which may be emphasized while creating awareness and providing supporting mechanisms. For example, the traditional micro enterprises may not be interested in patents because they may not be engaged in activities leading to patents. However, patents may become important for start - ups in IT and biotechnology. Medium enterprises are good candidates for awareness in patents and other forms of IPR as they can support formal research and spend on IPR protection and management.
6. Many industries feel that costs involved in obtaining and maintaining a patent over a reasonable period of time are quite high especially when the benefits are not clearly known. There is no scheme which provides upfront financial help for this purpose.

Survey findings

7. The per cent of patents granted to MSME is expected to be between 2.8 per cent and 23.4 per cent of all patents granted to Indian residents by the office of CGPDTG.
8. MSMEs which have obtained patents also tend to register their trademarks and designs, where applicable.
9. Among the pharmaceutical MSMEs, it is estimated that 7.3 per cent of MSMEs have been successful in obtaining patents.
10. The current patent activity in terms of patent filings of pharmaceutical MSMEs appears to be on the rise and about 16 per cent of such MSMEs are engaged in patent filing.
11. The awareness of pharmaceutical MSMEs in using internet for advertising their brands and products is very good. 61 per cent of the MSME have their websites which display their trademarks. The remaining 39 per cent are listed in various trade databases but do not have their own websites as yet.

12. It can be seen that against 61 per cent of the pharmaceutical MSME that are active in having trademarks, only 16 per cent MSMEs are active in patenting.
13. Among the MSMEs in the ICT sector the patent activity is very low and only 1.6 per cent MSME are engaged in this activity.
14. The ICT MSME however, are well aware about the role of trademarks. 80 per cent of the MSME have their own websites and their trademarks are also displayed on these websites. The remaining 20 per cent are visible on the internet in various trade databases.
15. The five-yearly national survey of MSMEs conducted by the Government of India does not specifically mention anything about the pharmaceutical, biotechnology and ICT sectors which are the sunrise sectors in India and will continue to remain so in the coming years.

Databases

16. IPR databases in India such as of patent, trademarks and designs do not indicate if the owner of an IPR is an MSME or not, as this information is not sought in the filing application. It is then very difficult to know and understand the IPR portfolio of MSME. This comes in the way of policy planning and implementation. The task of bringing about the change is not simple for various reasons including other stakeholders who would also like to be identified in the database. In order to make the task a little easier, the pharmaceutical and ICT MSMEs can be included to start with.
17. IPR databases are still not user friendly, do not meet the needs of different users nor are they easily accessible. There is no digitized searchable database in respect of design and copyrights.
18. As registration of MSMEs is not mandatory, most of them are not registered, further the database of the registered companies is not digitized making it difficult to use the information. In the long run it comes in the way of preparing policies and action plans based on the needs of MSME.
19. Class wise information on registered designs is not published regularly. This information is considered useful for understanding the relationship between classes and corresponding registered designs.

Training

20. A need is felt for an extensive programme with as many MSME as possible as they require a great deal of hand holding in terms of initial education and training in generation, protection and management of IPR. The present level of activities is still at a level much below the critical level.
21. A large pool of IPR professionals is required for advising and guiding MSMEs regarding management of their IPR.
22. IPR needs of different sectors may be different and therefore the IPR strategies would need to be calibrated accordingly. These strategies would also have to match the growth of the sector. For example, electronics hardware production and exports are growing fast. The concerned MSME need to be educated about IPR and supported for protecting their IPR in India and other countries in an aggressive manner. Similarly, IPR needs of MSME in the gems and jewellery, drugs and fine chemicals, machinery and instruments sectors, which contribute to exports substantially, should be addressed in a specific manner.
23. TBIs have a weak component on IPR in their programmes due to lack of teachers of IPR.
24. ICT penetration in the MSME sector is still very low and Indian MSMEs lack formal ICT based decision making systems. Therefore, such MSMEs having low or no ICT penetration cannot use IPR information systems such as patent and trademark databases either to obtain their own IPRs or to avoid infringement of others. This drawback can be reduced if industry specific IPR databases are available to clusters and industry associations.

25. Most MSMEs do not have adequately trained people to carry out R&D and inventive work. No incentives exist for MSMEs to invest in this area.

Technology Development and Licensing

26. There is no policy making it mandatory for public funded research institutions to (i) direct part of their research to MSMEs; (ii) make their research results known to MSMEs; and (iii) license IP so generated to MSMEs on a priority basis.
27. The procurement procedures of government agencies do not encourage purchase of new and invented products as such products are at times considered proprietary items. It is evident that invented products may not have any competing product in the market. Such rules have negative effect on innovations reaching the market.
28. Technology upgradation without consideration to patents and other forms of IPR may be filled with risks of infringement. Patent information can be used for identifying appropriate technologies and partners for licensing.
29. There are other schemes focusing on incubators, design clinics, and technology upgradation. These schemes will need to include a strong component of IPRs in framing guidelines for the programmes.
30. Anti-competitive practices in contractual licensing of IPR are covered in the Competition Act, 2002 and IPR laws. MSME associations must develop an understanding about such practices and advise their members accordingly while the members go for technology licensing which would form the core of such license, for technology upgradation or want to become beneficiaries of the off-set policy.

General

31. Filings for obtaining patents and registering trademarks and designs by Indian residents have grown along with the GDP in the last four years which is considered a very positive sign. It may be noted that many of the applicants would be from the MSME sector thereby indicating that growth of IPR related activities in MSME are keeping pace with the GDP.
32. About 80 per cent of trademarks in classes related to textiles including readymade clothes, yarn etc., hand tools and leather in the year 2008-09 are registered in the names of Indians. It is expected that the same picture would be valid in many other classes of trademarks. Further, the sectors of readymade clothes, hand tools and leather are heavily populated by MSME, hence a substantial ownership of these trademarks would be with MSME.
33. India has signed bilateral trade agreements like CECA, CEPA and FTA with many countries. IPR constitutes an important part of all these agreements with coverage varying from agreement to agreement. MSME engaged in export to these countries must be made aware of these aspects by means of publication or internet. Indian foreign missions in these countries may display these features on their websites and advise exporters accordingly. For example, the CEPA with Japan has simplified many procedures which would be an advantage for Indian MSMEs desiring to protect their IPR in Japan.
34. The share of trademarks for services has gone up in the last few years in tune with the larger share of the services sector in the GDP. MSMEs are expected to be the owners of many such marks.
35. The number of geographical indications has been rising for the last three years and the products belong to the MSME sector.
36. Limited liability partnership (LLP) system is in place now and MSMEs can take advantage of this for limiting their risks.

37. MSME engaged in exports face difficulties in enforcing their trademarks in foreign countries due to lack of awareness and otherwise as well. The first step towards this would be to have the trademarks registered in the countries of export. Membership of Madrid Protocol may be useful for addressing most of the issues.
38. It is pertinent to recognize that IPR forms only a part of a business / industry most of the time. There are other elements such as finance, regulatory matters, marketing etc which also play an important role in the success and sustenance of business.
39. MSMEs have expressed concern on the long time taken in the grant of patents in India. Any explanation that their patent rights start from the date of filing and that infringement proceedings can be instigated to effect from the date of 18th month publication is not really convincing for them. The costs involved in obtaining and maintaining a patent is also considered a roadblock.
40. The handicraft and agricultural products constitute 91 per cent of GI registered so far. There is no common mark for the registered GI to distinguish such products from the non-GI products. Further, efforts towards awareness of the general public and the authorized users of GI are very weak.
41. The agriculture sector is not covered under the umbrella of MSME except that some machinery and other engineering products, and services would be directly related to this sector. Agricultural products like seeds, fruits etc. are not covered under the MSME. It may be recalled that inventions by Indians in this sector are noticeable and most GI belong to this sector.
42. Skills of managing innovations and IPR are limited among MSME.

3.11 Recommendations

Awareness

1. There is overemphasis on patents in the name of IPR in the country. There is little realization that other forms of IPR exist and some of them may be more important than patents in the short term, or even in the long run for specific activities. Therefore awareness created among MSME should be well rounded and the topics in such programmes should be carefully chosen and deliberated.
2. There are few schemes of Government of India which aim to create awareness about IPR among MSME and conduct training programme. While it may appear that an excessive number of programmes are being held, thus questioning the current efforts, it is to be realized that for a country like India with such a large number of MSME, the present efforts are below the critical level. The awareness programmes must continue with the support of the government. IPFCs and MSME-DI should play a leading role in this endeavour.

Training

3. A large pool of professionals will be required for advising and guiding MSME regarding management of their IPR as they cannot afford their own IPR cell; this pool is presently not available. IPFC and MSME Development Institute must be engaged in this activity extensively. Patent agents and trademark agents may be trained in other aspects of IPR such as management of IPR and they will then become a useful pool of consultants. The Ministry of MSME may consider launching such a programme. The officers of MSME-DI should also be trained in IPR to become trainers.
4. The absence of trained human resources within MSME may be one reason for the lack of innovations. Many industries may not be interested in this matter as they are already making profits. However, from a long term perspective, the government may think of some enabling systems. For example, weighted tax exemption of 200 per cent or more may be given to companies on a yearly basis for training staff in relevant areas as per pre-determined norms set up by the government.

5. Patents do not seem to attract the attention of many MSMEs. This may be due to several reasons such as not having knowledge about patents, cost involved in generation, protection and maintenance of patents and inadequate experimental/ testing facilities and time involved in obtaining patents. During all training programmes, MSME need to be given correct understanding on patents and their potential to increase revenue.
6. IPR awareness should become an essential part of the training of incubates in TBI with emphasis on the importance of IPR to their business and future growth.
7. Technologically upgrading MSME without consideration to patents and other forms of IPR may have greater risks of infringement when undertaken by an MSME. If upgrading is planned through licensing from partners in India or elsewhere, due attention should be paid to all IPR related aspects especially in contracts of licensing. This aspect may be included in training programmes.
8. IPR needs of different sectors may be different in terms of awareness, training and protection and management strategies. While these strategies are calibrated, these also have to take into account the growth of the sectors. Special attention should be paid to a large number of MSME clusters setup by the Government of India.

Databases

9. There is an urgent need to have improved databases for all types of IPR especially copyrights, designs, patents, trademarks to make them user friendly and accessible on the internet. These databases should provide different options for searches for the benefit of different users and uses. With the rise in the ICT sector, the copyright information should be digitized and the access to it should be on the internet. The goal should be to make these databases comparable to those of developed countries in terms of field, search options, reports, speed and accessibility.
10. Industry specific databases must be developed to reduce the chances of infringement by MSME and the databases made available to industries and their associations. The task may be assigned to IPFCs being created by the government. The databases should be for patents, designs, trademarks, GI, copyrights and new plant varieties. Simultaneously, attempts should be made to make use of readily available data and databases. Such databases would help in avoiding possible infringements by MSME.
11. As most MSME are not registered it becomes difficult to prepare policies and action plans based on IPR. A drive should be launched to register MSME and the database of the registered MSME should be digitized and updated from time to time.

Government policy

12. There is a need to formulate and implement a system by which newly innovated products should be considered in procurement by government agencies and not ruled out on grounds of being proprietary items or not having been in the market for a specified time. A system needs to be in place to have newly innovated products evaluated and then considered in the tender. Norms for evaluation should be defined in advance.
13. Introduction of utility models in India is a subject of research, detailed study and analysis and should be looked into from the perspectives of public policy and advantages it is likely to provide to the MSME sector in India. A study may be launched on this subject by the government.
14. A policy may be prepared to facilitate transfer of IPR from publicly funded research institutions including academic institutions to MSME on a priority basis so that MSME have the first right to use them. MSME must exercise their rights within a specified time. The institutions which successfully practise this principle should be given some incentives like little higher research grants.

15. The five-year survey of MSME conducted by the Government of India should have specific data on pharmaceutical, biotechnology and ICT MSME which are the sunrise sectors. Further, the survey can also include some elements of IPR.
16. MSME will have to pay special attention to IPR issues while trading with partner countries under various trade agreements such CEPA and CECA with India and other countries which may become trading partners in days to come. It is important that MSME are made aware of these agreements so that they feel confident in trading and also take adequate steps to protect their IPR. Further, professional assistance would have to be provided to MSME to handle such contracts and situations through training and consultancy services. Information brochures on Dos and Dents in relation to IPR may be prepared by government and industry associations and shared with MSME.
17. MSMEs have expressed concern on the long time taken in grant of patents in India. Any explanation that their patent rights start from the filing date and infringement proceedings can be instigated with effect from the date of 18th month publication, is not really convincing for them. The fact of the matter is that a patentee has to wait till the grant of patent for launching any infringement proceedings against a copier. By that time the product may be at the end of its life cycle. The court case may take few years and the damages, if granted, may not be commensurate with the efforts. There is a need to expedite the patent granting procedure. A special window may be considered for MSME which are registered.

Incentives for protection of IPR

18. There are few schemes of the government which reimburse costs of obtaining patent or filing patents. There is no support available for maintaining the granted patents. It may be desirable to create a window which can provide help for maintaining patents in India. Duty exemptions may also be considered for patented products and processes. These benefits could be provided to the registered MSME to start with.
19. A separate institutional mechanism may be considered for the purpose of assessing innovations from MSME, providing professional guidance, helping in protection of IPR and arranging funds for protection and initial support for products trial. All the approvals should come in a time bound manner, may be in six months. The institution can have a corpus of say Rs 1000 million. The institution should be managed by right professionals having expertise in IPR, finance, technological evaluation etc. The overall management of the institution should be jointly with industry associations and government.
20. The agriculture sector is not directly covered under the umbrella of MSME except for some machinery, other engineering products and some services. Agricultural products like seeds, fruits etc. are not covered under the MSME. For protecting farmers' varieties of cereals, fruits etc. funds are required in terms of official fees and lawyer's charges. There should be provision for reimbursement of such costs as is available for patents.

Protection of GI

21. India has the potential of utilizing its traditional knowledge for wealth generation and in that process the role of Geographical Indications cannot be undermined. The beneficiaries of the GI would be MSME. While new GI are being registered by Indians, the government may design and evolve a GI Mark to be put on all GI products for helping the customers identify such products. The GI Mark can be in different forms like hologram, print, embossed, weave, label, electronic chips etc. and an appropriate form may be selected depending on the products. There should be awareness and advocacy programmes for the authorized users regarding monitoring violation of GI and for the general public about the importance of GI through exhibitions, print and electronic media and other means.

WIPO role

22. The Indian experience in respect of Ponni rice raises the issue of granting a trademark, identical with a known name of an agricultural product. There should be an understanding globally that such names should not be registered as trademarks. WIPO may consider taking this further and evolve a consensus among members.
23. The culture of IPR audit is almost a non-existent practice in India. MSME must be educated to carry out an audit of their IPR internally or with the help of an external auditor. It may be worthwhile to develop an audit system for auditing IPR of MSME which can be used as a certification tool for IPR management on lines similar to the ISO system for quality etc. WIPO may play a coordinating role.
24. WIPO may arrange meetings / conclaves of MSME from different countries for evolving global strategies for designing effective management systems of IPR in MSME.
25. A concessional fees system for MSME from countries having per capita income up to a certain level may be considered for trademarks and designs for encouraging export from MSME. WIPO may explore the applicability of this recommendation. At the same time a helpdesk may be developed under the aegis of WIPO for facilitating trade by MSME from all member countries.

Appendix 1 : Abbreviations used in this report

ARD	American Research Development
ASEAN	Association of Southeast Asian Nations
BI	Business Incubators
BT	Biotechnology
CECA	Comprehensive Economic Cooperation Agreement
CEPA	Comprehensive Economic Partnership Agreements
CGPDTG	Controller General of Patents, Designs, Trade Marks and Geographical Indications
CII	Confederation of Indian Industry
CIPI	Confederation of Indian Pharmaceutical Industries
CSIR	Council of Scientific and Industrial Research
ERP	Enterprise Resource Planning
FDI	Foreign Direct Investment
FICCI	Federation of Indian Chambers of Commerce and Industries
FISME	Federation of Indian Micro and Small & Medium Enterprises
FITT	Foundation for Innovation and Technology Transfer
FMCG	Fast Moving Consumer Goods
FTA	Free Trade Agreements
FTO	Freedom to Operate
GDP	Gross Domestic Product
GI	Geographical Indications
GMP	Good Manufacturing Practices
GOI	Government of India
HR	Human resources
ICAR	Indian Council of Agriculture Research
ICMR	Indian Council of Medical Research
ICT	Information & Communication Technology
IGNOU	Indira Gandhi National Open University
IIP	Index of Industrial Production
IIT	Indian Institute of Technology
Infosys	Infosys Technologies
IPAB	Intellectual Property Appellate Board
IPCU	University IPR cells
IPFC	Intellectual Property Facilitation Centres
IPR	Intellectual Property Rights
IT	Information Technology

JCR	Jyoti Cero Rubber
LLP	Limited Liability Partnership
LMCS	Lean Manufacturing Competitiveness Scheme
LVP	large volume parenterals
MSME	Micro, Small and Medium Enterprises
MSME-DI	MSME Development Institutes
MSMED Act	Micro, Small and Medium Enterprises Development Act 2006
MTR	Mini Tool Rooms
NASSCOM	National Association of Software and Services
NCE	New Chemical Entity
NMCP	National Manufacturing Competitiveness Programme
NSTEDB	National Science and Technology Entrepreneurship Development Board
PFC	Patent Facilitating Centre
PIC	Patent Information Centres
PPP	Public-Private Partnership
PV	Photovoltaic
QMS	Quality Management Standards
QTT	Quality Technology Tools
R&D	Research and Development
S & T	Science and Technology
S&T	Science and Technology
SIDBI	Small Industries Development Bank of India
SIDO	Small Industries Development Organization
SIRO	Scientific and Industrial Research Organizations
SSA	Sarva Shiksha Abhiyan
SSI	Small Scale Industry
STEP	Science and Technology Entrepreneurs Parks
TBI	Technology Business Incubators
TCS	Tata Consultancy Services
TI	Technology Incubators
TIFAC	Technology Information, Forecasting and Assessment Council
TM	Trademarks
TPM	Total Productive Maintenance
TRIPS	Trade Related Aspects of Intellectual Property Rights
WIPO	World Intellectual Property Organisation
WTO	World Trade Organization

Appendix 2 : Number of trademarks registered (Classwise)

Class		2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1	Chemical products used in industry, science, photography, agriculture, horticulture and forestry, manures, etc	1158	1069	4684	2641	2451	1683	1088
2	Paints and varnishes	458	459	2256	1168	1133	900	539
3	Perfumery, cosmetics, etc	1793	1708	8588	5509	4343	3351	1913
4	Industrial oil and greases (other than edible oil) etc	331	318	1526	817	770	629	411
5	Medicinal, pharmaceuticals, veterinary and sanitary substances etc	12081	13339	35403	16641	12778	11313	10550
6	Un-wrought and partly-wrought common metals & their alloys, etc	528	1030	3187	1893	1850	1492	1149
7	Machine & mechanic tools, motors, etc	1348	1988	7292	1961	3400	2812	1809
8	Hand tools and instruments, etc	315	444	1508	816	761	584	403
9	Scientific, nautical, surveying & electrical apparatus etc	3637	2653	15447	8793	8333	6171	3877
10	Surgical, medical, dental and veterinary instruments, apparatus, etc	447	587	2282	1268	1343	970	790
11	Installation for lighting, heating, etc	1124	1451	5392	2965	2403	1945	1419
12	Vehicles and their parts, apparatus, locomotion by land, air & water	1126	2037	6106	2994	2302	1720	1344
13	Firearms, ammunition and projectiles, etc	112	138	513	252	259	230	179
14	Precious metals and their alloys, etc	399	664	2763	1647	1627	1175	880
15	Musical instruments (other than talking machines and wireless apparatus)	98	157	459	217	272	239	217
16	Paper & paper articles, stationery, printed matters, etc	2822	2322	13794	8294	7548	4708	3139
17	Gutta Percha, India Rubber, etc	473	881	2661	1463	1218	1163	824
18	Leather & imitation of leather etc	393	399	1788	1081	1206	786	647
19	Building materials, etc	472	735	3594	1820	1674	1650	1090
20	Furniture, mirrors, etc	393	343	2070	1190	1225	1000	766
21	Small domestic utensils, etc	405	731	2940	1551	1466	997	735
22	Ropes, strings, etc	130	178	631	376	411	361	291

23	Yarns & threads	261	227	1114	552	544	410	338
24	Tissues (piece goods) etc	805	930	4677	2838	2040	1702	1114
25	Clothing including boots, shoes & slippers	2732	3017	10384	6459	5077	4124	3229
26	Laces and embroidery, braids etc	214	200	984	590	593	497	400
27	Carpets, rugs, mats, etc	152	162	676	389	417	350	277
28	Games and playthings, etc	401	347	2023	1197	1074	692	631
29	Meat, fish, poultry, etc	703	962	4797	2876	2496	1952	1172
30	Coffee, tea, cocoa, etc	2108	2486	10819	7724	5845	4377	2167
31	Agricultural, horticultural and forestry products	549	963	3821	2063	1818	1607	984
32	Beers, ale and port, mineral & aerated waters	508	773	3401	1730	1719	1362	908
33	Wines, spirits, liquors	739	572	2127	1056	1132	914	579
34	Tobacco, smokers articles,	547	745	3588	2017	1802	1245	619
35	Advertising, business management, office functions	@	@	2325	2159	3357	4206	4258
36	Insurance, financial affairs, real estate affairs	@	@	1184	994	1431	1653	1906
37	Building construction, repair, installation services	@	@	809	942	1332	1565	1603
38	Telecommunications	@	@	606	796	1151	1186	1421
39	Transport, packaging and storage of goods	@	@	732	844	1094	1071	934
40	Treatment of materials	@	@	229	283	509	415	414
41	Education, training, and cultural activities	@	@	1877	2370	3238	3334	3544
42	Providing of food and drink, medical, hygienic and beauty care; veterinary and agricultural services, legal services, scientific and industrial research; computer programming; etc	@	@	3268	3864	5415	5711	4616
	Multiple Classes	@	@	@	262	0	18005	2316
	TOTAL	39762	45015	184325	109361	100857	102257	67490

@ Class not in existence

Appendix 3 : List of TBIs along with their areas of thrust (in brackets)

1. SJCE STEP, Mysore (information technology and electronics)
2. Tiruchirappalli Regional Engineering College (entrepreneurship and innovation, manufacturing, general engineering, agriculture biotech, environmental technology, electronics and instrumentation)
3. Science and Technology STEP, IIT Kharagpur (nano electronics, next generation integrated devices)
4. Science and Technology Park, Pune (information technology, clean technologies)
5. Science and Technology Entrepreneurs Park, Suratkhil (information technology, engineering design, multi-technology integration)
6. PSG Science and Technology Entrepreneurs Park, Coimbatore (mechanical engineering, information technology, electronics, biotechnology and textiles)
7. Basaveshwar Engineering College-Science and Technology Entrepreneurs Park, Bagalkot (food processing, textile technology, building technology)
8. JSSATE Science and Technology Entrepreneurs Park, Noida (information and communication technology)
9. STEP-TIET, Patiala (bio-fertilizers, mushroom cultivation, plant tissue culture, food processing, communication technology)
10. CIIE Initiatives, Ahmedabad (incubation, research, training and projects)
11. National Institute of Technology, Calicut (information technology, electronics, IT enabled services)
12. Vellore Institute of Technology- Technology Business Incubator, Vellore (auto components, biotechnology, consumer durable)
13. Technology Business Incubator, Kongu Engineering College, Erode (information and communication technology)
14. Society for Development of Composites, Bangalore (materials, product and process development)
15. Agri Business Incubator, ICRISAT, Hyderabad (agriculture)
16. Society for Innovation and Entrepreneurship, IIT, Bombay (broad spectrum technology, business incubator)
17. National Design Business Incubator, Ahmedabad (industrial design)
18. Mitcon Biotechnology Centre, Pune (agriculture, biotechnology, pharmaceuticals)
19. Technology Business Incubator, Birla Institute of Technology, Pilani (VLSI design and embedded systems)
20. Life Science Incubator- ICICI Knowledge Park, Hyderabad (biotechnology, pharmaceuticals, diagnostic)
21. Technopark Technology Business Incubator, Trivandrum (information and communication technology, computer software and hardware, computer based services, IT enabled services)
22. Periyar Technology Business Incubator, Thanjavur (herbal health)
23. Amity Innovation Incubator, Noida (information and communication technology, bio informatics)
24. IITM's Rural Technology and Business Incubator, IIT Madras, Chennai (rural development)

25. Bannari Amman Institute of Technology - Technology Business Incubator, Erode (biotechnology in agriculture, industrial and rural sectors)
26. Krishna Path Incubation Society, Ghaziabad (information and communication technology, electronics and mechanical engineering)
27. Amrita Technology Business Incubator, Kollam (information technology, electronics and communication)
28. SIDBI Innovation and Incubation Centre, IIT Kanpur (technology, engineering and all interdisciplinary areas)
29. Technology Business Incubator, University of Madras, Chennai (herbal and biotech products for pharma sector)
30. Ekta Incubation Centre, West Bengal University of Technology, Kolkata (information technology, biotechnology)
31. Venture Centre, National Chemical Laboratory, Pune (material science, biotechnology)
32. Technology Business Incubator, University of Delhi, South Campus (industrial microbiology and biotechnology with special emphasis on fermentation)
33. Society for Innovation & Entrepreneurship in dairying, Karnal (dairy and food processing, feed technology, dairy farming)
34. Technology Business Incubation Centre, Shriram Institute for Industrial Research, Delhi (plastics and rubber processing)
35. Malaviya Centre for Innovation, Incubation and Entrepreneurship, Banaras Hindu University, Varanasi (information and communication technology, biotechnology, food, agriculture and allied sectors)
36. MICA Comcubator, Ahmedabad (communication services, product application tools and equipment)

Note: Some incubation centres have started recently and may take some time to get operationally active.

(Source: First Status Report on Technology Business Incubation in India, 2009, Department of Science and Technology, Government of India)

Appendix 4 : Questionnaire sent to individual inventors

1. Number of patents granted to you

a. During 1994-2004

b. After 2004

2. Have you obtained patents

a. As an individual

Yes

No

b. As an owner of a company

3. Is your company a small scale unit?

4. Name and address of the company?

5. Do you have a registered trademark for your company?

6. Have you got a design registration for your product?

7. Has any of the above patent(s) been translated into product/process and been marketed directly by you?

8. Has any of the above patent(s) been licensed to some one else?

9. Are you maintaining all the above patents by paying annuity fees regularly?

10. Have the patent(s) helped you in increasing your annual revenue?

Appendix 5 : Questionnaire for market survey sent to industries

- | | Yes | No |
|--|--------------------------|--------------------------|
| 1. Name and address of the company along with the phone number, email address and website (if any). | | |
| 2. Are you a registered MSME? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Are you small enterprise? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Are you a medium enterprise? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Are you a sole proprietorship enterprise? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Are you a partnership enterprise? | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. What is the investment in plant and machinery? | | |
| 8. What is the field of activity of your company- Mechanical engineering, Electrical and electronics engineering, Materials, Chemicals, Pharmaceuticals, Information technology, software, others. <i>(Tick mark on the relevant activity would be adequate. There can be more than one activity.)</i> | | |
| 9. Number of patents granted to you or your company
a .During 1995-2004
b. During 2005-till date | | |
| 10. Have you obtained patents as an individual? | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Have you obtained patents in the name of the company? | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Title (s) of patents (a list can be obtained and appended to the questionnaire) | | |
| 13. Do you have registered trademark (s) for the company? | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. If yes, give the total number of trademarks class-wise held by your company. <i>(A list can be obtained even if class-wise information is not there. The list should be appended to the questionnaire. If possible please obtain some picture of trademarks)</i> | | |
| 15. Do you have a domain name for your company? (Like www.alpha. com) | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Have you got design registrations for your products? | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. If yes, give the total number of designs registered class-wise. <i>(A list can be obtained even if class-wise information is not there. The list should be appended to the questionnaire. If possible please obtain some picture of designs).</i> | | |
| 18. Have you registered your copyright over software, drawings etc? | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. To advertise or market your products / services do you make use of brochures, catalogues, trademarks, media, direct mail, sign boards, website? . <i>(Tick mark on the relevant activity would be adequate. There can be more than one activity.)</i> | | |
| 20. Has any of the patents obtained by you been translated into products / process and been marketed? | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Did the patent help you in marketing or getting a competitive edge over your competitors? | | |
| 22. Have you licensed any of your patents / designs to someone else? | <input type="checkbox"/> | <input type="checkbox"/> |

23. Have the patents helped you in increasing your annual revenue?
24. Any idea about the percentage increase per year?
25. Have your trademarks helped in marketing your products more widely?
26. Are you maintaining all the above patents by paying annuity fees regularly?
27. Are you maintaining your trademarks beyond ten years by paying renewal fees?
28. How do you keep track of misuse of your patents, trademarks, designs and copyrights by others?
- Monitoring trademarks in the market
 - Monitoring trademarks filing by competitors
 - Monitoring designs in the market
 - Monitoring use of your patented inventions
 - Visiting exhibitions
 - Monitoring internet
29. Are you engaged in exports?
30. If yes, have you registered your trademarks in the country of export?
31. Is your staff generally aware about intellectual property rights?
32. Are you aware of various schemes of Government of India and State Governments about reimbursement of the cost of granted patents, trademarks etc.?
33. How did you realize the importance of IPR for your company?
- Newspaper reports
 - Attending IPR workshops and training programmes
 - Market needs
 - Through friends and relatives
 - Others
34. Do you face financial difficulty in protecting your inventions through patents, trademarks and designs? If yes, did you miss any opportunity due to lack of funds? (*some descriptive information may be recorded*)

Appendix 6 : Questionnaire for incubates in TBI and national award winning MSME

1. Name of the company with address
2. Are you an MSME (Yes / No)
3. Category you belong to Micro / Small / Medium
4. Do you have any patents, trademarks, designs, copyrights in your name? If yes, please state their numbers separately.
5. Have you filed any applications for patents, trademarks, designs and cop copyrights? If yes, please state their numbers separately.
6. If the answer to questions 5 and 6 is 'no', is it because of
 - a. Lack of knowledge about IPR
 - b. Lack of funds to meet the cost of obtaining IPR
 - c. Lack of professional help
 - d. Lack of perception about the benefits of IPR for your business
7. Are you aware of various schemes of government (Central and State) providing financial support to MSME for protecting their intellectual property?

Definitions:

Micro: Investment in plant (P), machinery (M) and equipment (E) not exceeding Rs. 2.5 million (\$50 thousands) for manufacturing enterprises and Rs.1.0 million (\$20 thousands) for service enterprises

Small: Investment in P, M and E not exceeding Rs. 50 million (\$ 1 million) for manufacturing enterprises and Rs. 20 million (\$ 0.40 million) for service enterprises

Medium: Investment in P, M and E not exceeding Rs. 100 million (\$ 2 million) for manufacturing enterprises and Rs. 50 million (\$1 million) for service enterprises.

\$ 1= Rs.50

Appendix 7 : List of 15 Industries that responded to the questionnaire at Appendix 5

1.	Karpagam Industries, Coimbatore
2.	Sumeet Research & Holdings Pvt. Ltd., Chennai
3.	Rempal Hydraulics, Chennai
4.	Intelligent Micro System Pvt. Ltd., Chennai
5.	Millmore Engineering Pvt Ltd., Chennai
6.	Star Wire Ltd., Ballabgarh, Haryana
7.	Sri Seshasayee, Vijaywada
8.	Pangansmula, Hyderabad
9.	Phooltas Tamper, Patna
10.	EPC Industries, Nasik
11.	Prima Plastics, Mumbai
12.	Prime Industrial Valve, Ahmedabad
13.	Industrial Jewels, Mumbai
14.	V S T Industries, Hyderabad
15.	Hyderabad Industries, Hyderabad

Appendix 8 : List of pharmaceutical companies

1	A B L Biotechnologies Ltd.	Small
2	Aarey Drugs & Pharmaceuticals Ltd.	Small
3	Add - Life Pharma Ltd.	Small
4	Adinath Bio - Labs Ltd.	Small
5	Advik Laboratories Ltd.	Small
6	Agio Pharmaceuticals Ltd.	Small
7	Anmol Drugs & Pharmaceuticals Ltd.	Small
8	Anuh Pharma Ltd.	Small
9	Auro Laboratories Ltd.	Small
10	Avinash Drugs Ltd.	Small
11	Bal Pharma Ltd.	Small
12	Beryl Drugs Ltd.	Small
13	Bharat Parenterals Ltd.	Small
14	Biddle Sawyer Ltd.	Small
15	Biochemical & Synthetic Products Ltd.	Small
16	Biofil Chemicals & Pharmaceuticals Ltd.	Small
17	Blue Cross Laboratories Ltd.	Small

18	Burroughs Wellcome (India) Ltd. [Merged]	Small
19	Caplin Point Laboratories Ltd.	Small
20	Ceejay Tobacco Ltd.	Small
21	Chemech Laboratories Ltd.	Small
22	Chemo - Pharma Laboratories Ltd.	Small
23	Chiplun Fine Chemicals Ltd.	Small
24	Colinz Laboratories Ltd.	Small
25	Concord Drugs Ltd.	Small
26	Croydon Chemical Works Ltd. [Merged]	Small
27	Denis Chem Lab Ltd.	Small
28	Dental Products Of India Ltd.	Small
29	Desh Rakshak Aushdhalaya Ltd.	Small
30	Dr.Sabharwal'S Manufacturing Labs Ltd.	Small
31	Dr. Wellmans Homoeopathic Laboratory Ltd.	Small
32	Ebers Pharmaceuticals Ltd.	Small
33	Elder Health Care Ltd.	Small
34	Elder Projects Ltd.	Small
35	Endolabs Ltd.	Small
36	Esskay Pharmaceuticals Ltd.	Small
37	Fredun Pharmaceuticals Ltd.	Small
38	Fulford (India) Ltd.	Small
39	Geoffrey Manners & Co. Ltd. [Merged]	Small
40	Gujarat Terce Laboratories Ltd.	Small
41	Haffkine Ajintha Pharmaceuticals Ltd.	Small
42	Haffkine Bio - Pharmaceutical Corpn. Ltd.	Small
43	Harleystreet Pharmaceuticals Ltd.	Small
44	Hester Pharmaceuticals Ltd.	Small
45	Hulta Pharmaceutical Export Ltd.	Small
46	Indo - American Advanced Pharmaceuticals Ltd.	Small
47	Inwinex Pharmaceuticals Ltd.	Small
48	Ishita Drugs &Inds. Ltd.	Small
49	Ivee Injectaa Ltd.	Small
50	Jenburkt Pharmaceuticals Ltd.	Small
51	Kamron Laboratories Ltd.	Small
52	Kappac Pharma Ltd.	Small
53	Kilitch Drugs (India) Ltd.	Small
54	Lekar Pharma Ltd.	Small
55	Leopard Investments Ltd.	Small
56	Makers Laboratories Ltd.	Small

57	Mercury Laboratories Ltd.	Small
58	Monozyme India Ltd.	Small
59	N B Z Pharma Ltd.	Small
60	N G L Fine - Chem Ltd.	Small
61	Nalin Chemicals Ltd.	Small
62	Ortin Laboratories Ltd.	Small
63	Ozone Pharmaceuticals Ltd.	Small
64	Perk Pharmaceuticals Ltd.	Small
65	Phaarmasia Ltd.	Small
66	Pharmaids Pharmaceuticals Ltd.	Small
67	Principal Pharmaceuticals & Chemicals Ltd.	Small
68	Proto Infosys Ltd.	Small
69	Rekvina Laboratories Ltd.	Small
70	Roopa Industries Ltd.	Small
71	Rubra Medicaments Ltd.	Small
72	Saket Projects Ltd.	Small
73	SamratPharmachem Ltd.	Small
74	Sandu Pharmaceuticals Ltd.	Small
75	Sanofi - Synthelabo (India) Ltd.	Small
76	Sarabhai Zydus Animal Health Ltd.	Small
77	Shaba Chemicals Ltd.	Small
78	Sharon Bio - Medicine Ltd.	Small
79	Shilpax Laboratories Ltd.	Small
80	Shree Dhootapapeshwar Ltd.	Small
81	Sigachi Laboratories Ltd.	Small
82	Solus Pharmaceuticals Ltd.	Small
83	Solvay Pharma India Ltd.	Small
84	Supriya Pharmaceuticals Ltd.	Small
85	Swas Health Products Ltd.	Small
86	Sword & Shield Pharma Ltd.	Small
87	Tablets (India) Ltd.	Small
88	Trans Medicare Ltd.	Small
89	Triochem Products Ltd.	Small
90	Twilight Litaka Pharma Ltd.	Small
91	Unibios Laboratories Ltd.	Small
92	Unjha Formulations Ltd.	Small
93	Venkat Pharma Ltd.	Small
94	Venus Remedies Ltd.	Small
95	Veronica Laboratories Ltd.	Small

96	Vikram Thermo (India) Ltd.	Small
97	Vysali Pharmaceuticals Ltd.	Small
98	Welcure Drugs & Pharmaceuticals Ltd.	Small
99	Wockhardt Biopharm Ltd.	Small
100	Yenkey Drugs & Pharmaceuticals Ltd.	Small
101	Zenith Health Care Ltd.	Small
102	Zenotech Laboratories Ltd.	Small
103	Zuventus Healthcare Ltd.	Small
104	Zyden Gentec Ltd.	Small
105	Zydus Pathline Ltd. [Merged]	Small
106	Apex Laboratories Ltd.	Medium
107	B D H Industries Ltd.	Medium
108	Bajaj Consumer Care Ltd.	Medium
109	Bombay Drugs & Pharmas Ltd. [Merged]	Medium
110	Chemcaps Ltd.	Medium
111	Coral Laboratories Ltd.	Medium
112	D I L Ltd.	Medium
113	Dolphin Laboratories Ltd.	Medium
114	Emergy Pharma Ltd.	Medium
115	Eupharma Laboratories Ltd.	Medium
116	Fermenta Biotech Ltd.	Medium
117	Fine Drugs & Chemicals Ltd. [Merged]	Medium
118	Group Pharmaceuticals Ltd.	Medium
119	Gufic Biosciences Ltd.	Medium
120	Gujarat Inject (Kerala) Ltd.	Medium
121	Icon Biopharma & Healthcare Ltd.	Medium
122	Indosol Drugs Ltd.	Medium
123	Ind - Swift Ltd.	Medium
124	Jagsonpal Pharmaceuticals Ltd.	Medium
125	Konar Organics Ltd.	Medium
126	Laurel Organics Ltd.	Medium
127	Lincoln Pharmaceuticals Ltd.	Medium
128	Medicamen Biotech Ltd.	Medium
129	Neon Laboratories Ltd.	Medium
130	Organon (India) Ltd.	Medium
131	P I Drugs & Pharmaceuticals Ltd.	Medium
132	Pan Drugs Ltd.	Medium
133	Paras Pharmaceuticals Ltd.	Medium
134	Pharmacia Healthcare Ltd. [Merged]	Medium

135	Pharmax Corporation Ltd.	Medium
136	Rusan Pharma Ltd.	Medium
137	Sanjivani Paranteral Ltd.	Medium
138	Span Diagnostics Ltd.	Medium
139	Sri Krishna Drugs Ltd.	Medium
140	Suyash Laboratories Ltd.	Medium
141	Synbiotics Ltd.	Medium
142	Tonira Pharma Ltd.	Medium
143	Uni - Sankyo Ltd.	Medium
144	Vista Pharmaceuticals Ltd.	Medium

Appendix 9: List of ICT companies

1	Ace Innovators Pvt Ltd
2	Aditi Computers
3	Allsec Technologies Ltd
4	Angler Technologies India Pvt Ltd
5	Aparajitha Corporate Services Pvt Ltd
6	Appco Marketing (I) Pvt Ltd
7	Artefact Projects Ltd
8	Artintel System Laboratories (P) Ltd
9	Ase Structure Design Pvt Ltd
10	Axsys Technologies Ltd
11	Azure Knowledge Corporation Pvt Ltd
12	Bechtel India Pvt Ltd
13	Best Of Breed Software Solutions India Pvt Ltd
14	Bhogal Exports
15	Bips Pvt Ltd
16	Brainware Consultancy Pvt Ltd
17	Broadridge Financial Solutions (I) Pvt Ltd
18	Cactus Communications Pvt Ltd
19	Cadd Centre India Pvt Ltd
20	Cadgraf Digitals Pvt Ltd
21	Ccs Technologies (P) Ltd
22	Chanakya Group Of Newspapers
23	Clc Softwares
24	Commodity Online India Ltd

25	Competent Synergies Pvt Ltd
26	Congruent Solutions Pvt Ltd
27	Consim Info
28	Cottage Industries
29	Crossdomain Solutions Pvt Ltd
30	Css Technergy Ltd
31	Cue Blocks Technologies Pvt Ltd
32	Cyber Futuristics India Pvt Ltd
33	Cybizcall (International) Pvt Ltd
34	Databazaar India Pvt Ltd
35	Dolphin Softech Pvt Ltd
36	Dr It Planets Ltd
37	Dun & Bradstreet Information Services Pvt Ltd
38	E4e Business Solutions India Pvt Ltd
39	Eaton Technologies Pvt Ltd
40	E-Convergence Technologies Ltd
41	Elixir Web Solutions Pvt Ltd
42	Eon Infotech Ltd
43	Evolutionary Systems Pvt Ltd
44	Excel Soft Technologies Pvt Ltd
45	Fugro Survey (India) Pvt Ltd
46	GauravLederwaren Pvt Ltd
47	Global Infovision Pvt Ltd
48	Globalnest It Solutions (P) Ltd
49	Globsyn Technologies Ltd
50	Gray Cell Technologies Exports
51	Hi-Tech Outsourcing Services
52	Horizon Industrial Products Pvt Ltd
53	Icall India Pvt Ltd
54	Ids Infotech Ltd
55	Indigenius
56	Indus Integrated Information Management Ltd
57	Industrial Techno-Economic Services Pvt Ltd
58	Infopark
59	Integra Software Services (P) Ltd
60	Integrated Digital Systems
61	Ipsr Solutions Ltd
62	Ite Infotech India Ltd
63	Karin Informatics Services Pvt Ltd

64	Kengs India Pvt Ltd
65	KlaTencor Software India Pvt Ltd
66	Kochar Infotech Pvt Ltd
67	KrishanKhanna - Export Promotion
68	Lambodra Information Technologies Pvt Ltd
69	Magna Infotech Pvt Ltd
70	Mantec Consultants Pvt Ltd
71	Marlabs Software (P) Ltd
72	Matex Net Pvt Ltd
73	Maze Net Solution (Pvt) Ltd
74	Mediasix Creative Services Private Ltd
75	Merce Technologies Pvt Ltd
76	Metlife Global Operations Support Center Pvt Ltd
77	Mitcon Consultancy Services Ltd
78	Mjunction Services Ltd
79	MI Infomap Pvt Ltd
80	Motif India Infotech Pvt Ltd
81	Nalam Healthcare Pvt Ltd
82	Netguru Ltd
83	Ni Systems India Pvt Ltd
84	Petro It Ltd
85	Point Perfect Transcription Services India Pvt Ltd
86	Print Packaging.Com Pvt Ltd
87	Quality Bpo Services Pvt Ltd
88	Quantum Solutions
89	Ranal Engineering Service Pvt Ltd
90	Ravichandra Systems And Computer Services Ltd
91	Rdg Systems & Software Pvt Ltd
92	Rishabh Software Pvt Ltd
93	Rmsi Pvt Ltd
94	Satyam Bpo Ltd
95	Scope E-Knowledge Center Ltd
96	Seyyone Software Solutions Pvt Ltd
97	Shlok Information Systems India (P) Ltd
98	Sobis Software (India) Pvt Ltd
99	Software Paradigms (India) Pvt Ltd
100	Spi Technologies India Pvt Ltd
101	Spiretek
102	SsmInfotech

103	Svipja Techno Consultants Pvt Ltd
104	Symbiosys Technologies
105	Techno India
106	Technova India Ltd
107	Tenth Planet Technologies Pvt Ltd
108	Threekay Solutions Pvt Ltd
109	Track Four Infotec (I) Pvt Ltd
110	Unique Softpro India Pvt Ltd
111	Uptec-Computer Consultancy Ltd
112	Valtech India Systems Pvt Ltd
113	Vastek Solutions Pvt Ltd
114	Veena Diecasters & Engineers Pvt Ltd
115	Velan Info Services India Pvt Ltd
116	Verve Communications Pvt Ltd
117	Vijay Computers
118	Vikas Global Solutions Ltd
119	Vision 2k+Inc
120	Visionary RcmInfotech India Pvt Ltd
121	Visions
122	Visual Graphics Computing Services India Pvt Ltd
123	Webindia Internet Services (Chennai) Pvt Ltd
124	Zaidsoft

Appendix 10 : The Scheme “Building Awareness on Intellectual Property Rights (IPR)” for the MSME.

1. Awareness / Sensitisation Programme on IPR

Objective:

The primary objective of this programme is to facilitate and support MSMEs, industry associations and other concerned stakeholders in raising awareness on IPR related issues in general and more specifically on educating them about the value and protection of IPR and its benefits to the economy. The specific objectives of the programme for MSMEs are:

- i) To significantly raise the level of awareness and interest / knowledge about IPR issues.
- ii) To develop a broad understanding of the need to integrate IP in their innovation strategies and business planning.
- iii) To improve protection of IP achievements through increased registration of rights and increased use of non-registered protection methods.
- iii) To improve the protection and enforcement of IPR from infringements.
- iv) To enhance capacity to fight counterfeiting.

Component of Grant:

The Government of India will provide financial support up to Rs. 0.1 million per programme for organising these sensitisation / awareness programmes. This may cover wherever necessary, the expenses towards rent for venue, training materials, audio/video aids, TA/DA and honorarium to the Guest Faculty, expenditure on transport, purchase of stationary items, refreshment and other miscellaneous expenses. Government assistance is only for organisational expenses of the proposed event and not for capital items like equipments.

The minimum share of private partners shall be 10 per cent of the total GOI financial support given for organising the event.

2. Pilot Studies for Selected Clusters/ Group of Industries

Objective:

To provide financial assistance to eligible applicants to conduct Pilot Studies to identify the IP needs of the identified MSME clusters / industries and to recommend measures for further strengthening the IP portfolio. The specific objectives of the programme are:

- i) To generate information and knowledge required for developing strategies and methodologies for better IP management of specific industrial clusters (or groups) / industries,
- ii) To suggest solutions to problems of IP management.
- iii) To strengthen the MSME base in the multidisciplinary and emerging areas of IPR.
- iv) To suggest policy decisions relating to cluster - sector specific IP needs management.

Component of Grant:

The Govt. of India will provide a financial support up to Rs. 0.25 million per Pilot Study, primarily to cover expenses of the Expert Agencies for the conduct of the Pilot Study. The private partners i.e. the MSME cluster body shall have to provide funds equal to a minimum of 10 per cent of the GOI's financial support, as also all other facilities and data required for the study.

3. Interactive Seminars / Workshops

Objective:

The primary objective of this activity is to provide a forum to MSME entrepreneurs, Industry Associations and others stakeholders, including professionals having working experience of MSME sector to share knowledge, experience and create mass awareness on various aspects of IPR. The specific objectives of programme, inter alia, include:

- Tailor-made Seminars / Workshops for IP needs of identified clusters / industries.
- To discuss recommendations of Pilot Studies.
- To focus on industry / cluster specific IP adoption issue.

4. Specialised Training (Short / Long- term)

Introduction:

In the present global scenario there is an urgent need for creating skilled human resources so as to build capacity and develop the MSME sector that is compatible with IPR and commercialisation requirements. To achieve this objective, training programmes (both Short and Long duration) are proposed to be organised for enhancement of knowledge and capacity building of MSME sector in all fields of Intellectual Property.

Objective:

To provide technical inputs and support mechanism for facilitating efficient transfer of knowledge and skills on IPR through trainings so that different spheres of society – industries including MSME, academic and research institutions, academicians, students, entrepreneurs are benefited. One of the objectives of this programme is to increase the availability of the resource persons whose services could specifically be utilised to train/sensitise MSME sector on their specific IPR needs. The training will provide adequate knowledge to people to work in the area of IPRs by protecting their intellectual property, IP protection would help in:

- Preventing competitors from copying or closely imitating a company's products or services;
- Avoiding wasteful investment in research & development and marketing.
- Creating a Corporate identity through trademark & branding strategy and creating market value of the company.
- Protecting and securing foreign markets

5. Financial assistance on grant of Patent and Registration under Geographical Indications of Goods

Component of Grant:

Under this scheme, registered Indian MSMEs will be provided one-time financial support limited up to Rs. 0.025 million for grant of domestic patent and Rs. 0.20 million for foreign patent. For registering under the Geographical Indications of Goods Act, one time financial support will be limited up to Rs. 0.10 million. The support of GOI will be in the form of reimbursement to the applicant. The amount of grant will be restricted to actuals or the ceiling mentioned above, whichever is lower.

6. Assistance for setting up of IP Facilitation Centres for MSME

Introduction:

To assist the MSMEs and other prospective entrepreneurs to have an access to best practices, for identification, protection and management of IPR as a business tool.

Objectives:

The primary objective of setting up of an IP Facilitation Centre is to guide MSME and other target beneficiaries regarding utilisation of IP tools and technologies for better management of their intellectual property related needs.

The specific objectives of the centre will be as under:

- i) To provide computerised facilities for searching/ mapping, etc. with respect to patents, industrial designs, trade secrets, etc.
- ii) To provide basic information to file an application for grant of patent, GI, industrial design, trade marks, etc.
- iii) To facilitate successful transfer and commercialisation of technologies.
- iv) To facilitate collaboration with potential clients for exploring possibilities for technology tie-ups and up-scaling needs.
- v) To provide information on best IPR practices.
- vi) To provide guidance in filing applications with national / international agencies and execution of other documents concerning licensing technology transfer agreements, etc.
- vii) To advise beneficiaries on legal remedies available on issues such as infringement, duplication of patent / industrial designs, etc.

These Centres will work in close association with the National Patent Offices / Regional Patent Offices and other National / International Agencies administering implementation of IPR related matters.

7. Activities with the International Agencies

Introduction:

India as a developing country needs to work closely with the developed nations to promote innovation, creativity and technological advancement by providing a vivacious IPR management through cooperation in the field of capacity building activities and experience sharing. To achieve this objective, efforts will be met to develop suitable linkages and cooperation with IPR offices in developed countries and other International agencies, such as WIPO, EU, Japan Patent Office (JPO), German Patent and Trademark Office, U.S. Patent and Trademark Office (USPTO), Korea Intellectual Property Office (KIPO), etc.

Specific cooperation activities to be carried out each year will be jointly finalised in consultation with international agencies in the form of an Action Plan. The Action plan will include detailed planning for carrying out co-operation activities, including the scope of the action, administering assignment, time schedule and any other information deemed necessary. The details of the proposed course of action, broad parameters for implementing specific activities, etc may also be formalised in the form of mutual agreement/MoU.

Objective:

Major areas for cooperation will inter-alia, include:

- Sharing IPR related information between various countries
- Opening avenues for interaction in areas leading to acquisition of knowledge available globally.
- Building bridges to promote and strengthen bilateral ties through participation in joint R&D programmes.
- Capacity building in high-tech areas through training and exchange programmes.
- Sharing of expertise in the area of science & technology to facilitate implementation of IPR in the MSME sector in India.
- Understanding the different cultural approaches to scientific research.
- Studying the best country practices on IPR and to explore the possibilities to adopt them in for the MSME in India.

Appendix 11 : Form of Application for Grant of Financial Assistance for Setting up of 'IP Facilitation Centre for MSME'.

1. Title of the proposed project.
2. Name and Address of organisation / institute.
3. Activity of the organisation / Institute, number and size (also in term of installed capacity) of units and number of units.
4. Name of the chairperson and members of the organizing committee, if any.
5. Category in which the organising institution falls:
 - i) Registered Society or similar body.
 - ii) Academic Institution.
 - iii) University College/ Technical Institutions.
 - iv) Quasi Government or Government aided body.
 - v) Others (specify).
6. Details of Affiliates, if any. (Attach statement)
7. Details of proposed project
 - a) Objectives
 - b) Duration
 - c) Target groups (including areas to be covered under the project)
 - d) Major activities to be undertaken
 - e) Is there any other organization providing similar facilities in the adjoining areas. If so, the details thereof and justification for setting up of similar facility.
 - f) Project highlights (a brief project report may be submitted)
 - g) Proposed costs and time frame (Activity wise costing / expenditure).
 - h) Structure of Implementing Agency (IA) / SPV (users body).
 - i) Previous track record of MSME initiatives pursued by IA/ SPV (users body) need to be highlighted with support documents.
 - j) Revenue generation mechanism for sustainability of assets (service / user charges to be levied, any other to be specified).
 - k) Project implementation schedule and completion period.
 - l) Benchmarking impact of proposed interventions with regard to international competition (one section of the proposal should be devoted to highlight the likely impact of the project on beneficiary enterprises vis-à-vis export / global competition, particularly with regard to tradable (any product that may be conventionally exported or imported).
 - m) Mechanism for monitoring the progress of the centre in assisting MSME.
8. Any Additional Information giving justification for the project.
9. List of Documents Attached:
 - i) Certified copy of Registration or equivalent Certificate.
 - ii) Certified copy of Memorandum Articles of Association or Rules/ Regulation etc. (if applicable).

- iii) Certified copy of Audited statement of accounts for the last two years, if applicable.
- iv) Annual Report for the last two years, if applicable.
- v) Document giving an undertaking to properly conduct the programme and in case the programme is not organised, to refund the advance given by Government.

Signature & Designation

With seal/stamp

Terms and conditions

- i) The financial assistance will only be used for setting up of IP Facilitation Centre.
- ii) The assistance will be released in instalments depending on the progress of the centre. First instalment will be released after the proposal is approved on receipt of write-up on programme, venue, budget estimates item-wise, etc.
- iii) The balance amount will be released after the submission of the (i) Utilisation certificates from the Chartered Accountant, (ii) Statement of Account (iii) Original vouchers and progress made in term of envisaged deliverables.
- iv) Unspent portion of the assistance will be refunded to the Office of the Development Commissioner (DC), MSME.
- v) Separate accounts of the Programme will be maintained and the same will be subjected to test check by the Project Implementatation Committee through its representative.
- vi) In the event of violation of any of the terms and conditions of sanction, the organisation will have to refund the entire amount sanctioned, to the Commission on demand or such part thereof along with penal interest as per the government rates.
- vii) The office of DC (MSME) may lay down any other condition prior to the release of the assistance.

Appendix 12 : Support for International Patent Protection in Electronics and IT (SIP-EIT)

Objectives:

Department of Information Technology, MCIT, GOI has started a scheme to provide financial support to SMEs and Technology Start-Up units for international patent filing so as to encourage indigenous innovation and to recognize the value and capabilities of global IP and capture growth opportunities in the area of information technology and electronics.

2.0 Who are eligible to apply?

- Registered Indian Micro, Small and Medium enterprises.
 - Enterprises engaged in the manufacture or production of goods where the investment in plant and machinery does not exceed Rs.100.0 million
- or**
- Providing or rendering of services the scheme will be restricted to enterprises where the investment in plant and machinery does not exceed Rs.50.0 million
 - In-house R&D Certification by DSIR
- or**
- Technology Incubation enterprises registered as companies with support under some government scheme

3.0 What is the extent of Financial Support?

Upto 50 per cent of the total patent cost. The support will be in the form of reimbursement of expenses in actual to the applicant. Support will be limited to Rs.1.5 million or 50 per cent of the total expenses incurred on filing each invention whichever is less.

4.0 What kind of expenditures incurred during patent filing will be reimbursed?

All patent processing costs including Attorneys' Fees, Patent Office filing fees, Examination Fees, Patent Search cost, Additional cost for entering National Phase upto grant/issue. Subsequently after the grant, the cost will be borne by the industry.

5.0 What is the criteria for acceptance of patent applications for consideration of financial support?

- Applicants having already filed a patent application for the said invention in India
- Invention must be in the Electronics/ICT technology domain.
- The application must be accompanied by prior art search report from an International Search authority/ registered attorney firm or any other agency of repute.
- The patent applications are to be processed through a registered patent attorney in a patent attorney firm having an experience of at least 5 years in handling international patent applications.
- The applicant can apply for the support at any stage of international filing. However, reimbursement will only be applicable to expenditures incurred subsequent to the date on which application has been cleared for support.

6.0 What are the options for filing international patents?

The applicant can choose either the PCT route or can file directly to any country of his choice. However, the applicant needs to furnish justification for his choice of route and of country / countries in which he desires to file a patent application.

7.0 What are the documents to be provided by the company?

Application Form (giving requisite information about the applicant and the invention)

- Reimbursement Details (As per the format in the application form)
- Patent Search Report
- Product brochure (if any)
- Copy of Registration of the applicant industry
- Copy of official filing with Indian Patent Office
- Latest Annual Report of the Company.
- Proof of DSIR recognition of in-house R&D in industry (preferred) / Proof of Govt. supported Incubation Enterprise
- Declaration (as given in the application form)

8.0 When and how the reimbursement will be made?

The applicants are suggested to give the complete details in the first application. If the application satisfies the eligibility and acceptance criteria and, as per details given meets the patentability criteria for consideration of support, the reimbursement process will be initiated immediately and payment made through e- transfer.

Appendix 13 : Limited Liability Partnership (LLP) Act, 2008

LLP is governed by the provisions of the Limited Liability Partnership Act 2008, the salient features of which are as follows: -

- The LLP shall be a body corporate and a legal entity separate from its partners. Any two or more persons, associated for carrying on a lawful business with a view to profit, may by subscribing their names to an incorporation document and filing the same with the Registrar, form a Limited Liability Partnership. The LLP will have perpetual succession.
- The mutual rights and duties of partners of an LLP inter se and those of the LLP and its partners shall be governed by an agreement between partners or between the LLP and the partners subject to the provisions of the LLP Act 2008. The act provides flexibility to devise the agreement as per their choice.
- The LLP will be a separate legal entity, liable to the full extent of its assets, with the liability of the partners being limited to their agreed contribution in the LLP which may be of tangible or intangible nature or both tangible and intangible in nature. No partner would be liable on account of the independent or un-authorized actions of other partners or their misconduct. The liabilities of the LLP and partners who are found to have acted with intent to defraud creditors or for any fraudulent purpose shall be unlimited for all or any of the debts or other liabilities of the LLP.
- Every LLP shall have at least two partners and shall also have at least two individuals as Designated Partners, of whom at least one shall be resident in India.
- The LLP shall be under an obligation to maintain annual accounts reflecting true and fair view of its state of affairs.
- The compromise or arrangement including merger and amalgamation of LLPs shall be in accordance with the provisions of the LLP Act 2008.
- A firm, private company or an unlisted public company is allowed to be converted into LLP in accordance with the provisions of the Act.
- The winding up of the LLP may be either voluntary or by the Tribunal to be established under the Companies Act, 1956. Till the Tribunal is established, the power in this regard has been given to the High Court.
- The LLP Act 2008 confers powers on the Central Government to apply provisions of the Companies Act, 1956 as appropriate, by notification with such changes or modifications as deemed necessary.
- The Indian Partnership Act, 1932 shall not be applicable to Limited Liability Partnerships.

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Appendix 15 : Terms of Reference

SCOPE OF WORK

The study shall consist of the following parts:

Part I – The Economic, Policy and Institutional Framework for the Use of the IPR System as a Strategic Tool for Economic and Enterprise Development

This section should include the following elements:

- (i) A general overview of the state of the national economy and the national developmental goals and strategy of the country, including the key challenges, bottlenecks, and barriers;
- (ii) An overview of the national intellectual property laws and institutional framework, including an analysis of the IP titles owned by nationals of India in the last five years;
- (iii) International and bilateral IP related obligations (if any, e.g., free trade agreements and bilateral investment treaties);
- (iv) An overview of policies and initiatives which are relevant to the effective use of the IP system in the context of economic development, e.g., national systems for innovation, education, science and technology, industrial development, FDI, etc. Where relevant, information should also be provided on the prevailing situation in each area; in particular, the nature and scope of IP teaching for university students, including the availability, extent and quality of teaching/training of IP for students of laws, business, engineering and other academic disciplines; the availability and state of the various categories of IP professionals in the public and private sector;
- (v) Current and proposed policies and initiatives of all types for supporting private sector development, especially with regard to entrepreneurship, microenterprise and SMEs in all sectors of the economy, including agribusiness, manufacturing and services. This will include policies, institutions and initiatives related to: use of the IP system by the creators, inventors, researchers and entrepreneurs/enterprises, strengthening the SME support institutions, training institutions for entrepreneurship, microenterprise and SMEs, business development services; improving access to finance (including microfinance, venture capital, etc); development of incubators, science/technology parks, technology transfer institutions/offices in the R&D base/Universities, etc;
- (vi) Nature and scope of IP related support or capacity building programs/projects in the last five years that were or are being implemented by international or regional organizations as well as bilateral/multilateral donor/assistance programs;
- (vii) Nature and scope of entrepreneurship, microenterprise and SME support or capacity programs/projects in the last five years that were or are being implemented by international or regional organizations as well as bilateral/multilateral donor/assistance programs.

Part II – Impact of intellectual property on selected industries/sectors

This section includes the following elements:

- (a) Background information on each of the selected industries/sectors and the reasons for their selection;
- (b) Methodology for assessing the impact of IP on the selected industries/sectors, including an elaboration of the quantitative and qualitative techniques employed;
- (c) Whether and to what extent India's international obligations, its domestic policies and initiatives have had an influence on the impact of IP in these industries/sectors; and
- (d) Results and conclusions of the study.

Part III –SMEs (including microenterprises) and their use of IP in their competitiveness strategies

This section includes the following:

- (a) An overview of the SMEs (including microenterprises) sector in India, with emphasis on sectors included in Part II above, including the main institutions in the government, private sector and civil society that are providing varied types of financial and other types of assistance and support;
- (b) An assessment of the extent to which SMEs (including microenterprises) in India are aware of and/or are making effective use of the IP system either individually or collectively through reliance on, for example, collective marks, certification marks, geographical indication) for protecting and exploiting their IP assets, particularly in sectors included under Part II above. Include information on the extent of development of franchising in the country. This could draw on the results of the study in Part II;
- (c) Intellectual property needs of SMEs in sectors included in Part II, as perceived by the SMEs, their associations, and the government. Apart from systemic issues, this should also include problems encountered by SMEs in protecting their IP assets, including counterfeiting and piracy;
- (d) Whether and to what extent these needs are being addressed by publicly-funded awareness and/or capacity building programs on IP for SMEs and/or by private sector IP service providers, IP consultants/advisors and/or business consultants/advisors;
- (e) Level of awareness and ease of access, and uptake of existing publicly-funded awareness and/or capacity building programs on IP for SMEs, quality of such support and its effectiveness in achieving the desired outcomes);
- (f) Success stories (case studies) of SMEs making effective use of IP assets in their business strategies;
- (g) Conclusions.

Part IV – Conclusions and recommendations

This should include a summary of the main conclusions of the study and provide recommendations for improving and strengthening the use of IP for economic development in general and ways and means for using the tools of the IP system for improving the competitiveness of Indian SMEs (including microenterprises) in particular.

